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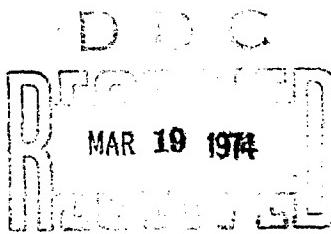
A COMPARISON TEST OF UNITED KINGDOM AND UNITED  
STATES AMMUNITION FOR LIGHTWEIGHT WEAPONS

NINTH REPORT OF PROJECT TS2-2015

VOLUME II

APPENDICES P - W

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APPENDIX P

Penetration Firing Data  
(167 sheets)

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21

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 20 Feb 1950 Time Started: 1345 Time Finished: 1420

Weapon, Type: U. S. T-25 Weapon No.: 10 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F

Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, Ball, T-104

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
	1	Lodged in 49th board.
2	48-1/4	Fell to ground after penetrating 1/4" on 49th board.
3	48-1/3	Fell to ground after penetrating 1/3" on 49th board.
4	50-3/4	Lodged in 51st board.
5	49-3/4	Lodged in 50th board.
6	48-1/2	Lodged in 49th board.
7	34-1/4	Fell to ground after denting 35th board.
8	43	Point protruding 1/2" beyond back of board.
9	48-1/2	Fell to ground after denting 49th board.
10	48-3/4	Fell to ground after denting 49th board.

Note: No bullet deformity.

Average 47.25

## APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1030 Time Finished: 1340

Weapon, Type: U. S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112 Wind: NNE 25 mph Weather: Clear Range: 25 Yards

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, AF, T-93.

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS	
1	13-1/2	Yaw begun on 4th board.	
2	14-1/2	Yaw begun on 6th board.	
3	48-1/2	Did not yaw.	
4	50	Did not yaw. Only 50 boards in target.	
5	50	Did not yaw. Only 50 boards in target.	
6	49	1/2" Protrusion beyond rear of board.	
7	49-1/2	Lodged in 50th board.	
8	48-1/2	Lodged in 50th board.	
9	14-1/2	Yaw begun on 5th board. May have been caused by proximity to other hole.	
10	30-1/4	Slight dent in 31st board only.	

Note: Jacket did not strip from core.

Average 37

APPENDIX P.

PENETRATION FIRING DATA

Date: 20 Feb 1950

Time Started:

Time Finished:

Weapon, Type: T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112 Winds: 25 mph Weather: Clear Range: 75 Yards

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, API, T-1CL.

HIT NO.	WT. OF CHARGE	DEPTH PENETRATED	REMARKS
1		16-1/4	Lodged base first in 17th board.
2		18-3/2	Lodged base first in 19th board.
3		18-3/4	Core lodged sideways in 16th board.
4		19-3/4	Lodged base first in 20th board.
5		18-1/2	Lodged 20th board sideways and bounced out.
6		18-1/2	Lodged base first in 20th board.
7		15-3/4	Lodged in 17th board.
8		14-3/4	Lodged in 15th board base first.
9		14-3/4	Lodged in 15th board base first.
10		14-3/4	Lodged in 15th board base first.

All rounds functioned about 14th and 15th board.  
Average: 17.25

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 20 Feb 1950 Time Started: 1345 Time Finished: 1420  
Weapon, Type: U.K. EM2 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F  
Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	NO. OF BOARDS PENETRATED	<u>REMARKS</u>	
1	39	Point protruding 1/4" beyond rear of 39th board.	
2	39-1/2	Lodged in 39th board.	
3	39	Point barely broke rear of 19th board.	
4	39-1/2	Fell to ground after denting 40th board.	
5	40	Point protruding 1/2" beyond rear of 40th board.	
6	37	Point protruding 3/4" beyond rear of 37th board.	
7	39	Point protruding 3/4" beyond rear of 39th board.	
8	39-1/2	Lodged in 40th board.	
9	41	Point protruding 1" beyond 41st board.	
10	42	Lodged in 42nd board. Point just broke back of board.	

Note: Jacket did not strip from core.  
Average: 39.50

212

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1030 Time Finished: 1340  
Weapon, Type: U.K. EM2 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21°F  
Density: 1.112 Wind: NW 25 mph Weather: Clear Range: 25 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .280, AP

TP NO.	NO. OF BOARDS PENETRATED	REMARKS
1	34	Point protruding 1/4" beyond 34th board.
2	37	Point protruding 1" beyond 37th board.
3	38-1/2	Lodged in 40th board.
4	39	Point protruding 1/8" beyond 39th board.
5	37-1/2	Lodged in 38th board.
6	37	No mark on 37th board.
7	37	Lodged in board.
8	37-1/2	Lodged in 38th board.
9	38-1/2	Lodged in 39th board.
10	40-1/2	Fell to ground, after penetrating 1/2" on 41st board.

Note: Jacket did not strip from core.  
Average: 37.50

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950

Time Started: 0940

Time Finished: 1020

Weapon, Type: M2

Weapon No.: 3

Previous Rounds: 0

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112 Wind: N 25 mph

Weather: Clear

Range: 25 Yards

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .250 API

HIT NO.	NO. OF BOARDS PENETRATED	<u>REMARKS</u>	
		PP	REMARKS
1	38	PP 3/4".	Lodged in 37th board.
2	37-3/4	PP 3/4".	Lodged in 38th board.
3	32	PP 1/2".	Small mark on 39th board.
4	40-1/2	PP 1/2".	Lodged in 41st board.
5	40-1/4	PP 1/2".	Lodged in 41st board.
6	41	PP 1/4".	Lodged in 41st board.
7	43	PP 1/8".	Lodged in 43rd board.
8	39-3/4	PP 1/8".	Lodged in 40th board.
9	39-1/2	PP 1/8".	Lodged in 40th board.
10	40	PP 1/8".	Lodged in 40th board.

Note: PP = Point protruding behind board.  
Average: 39.75

APPENDIX P

PENETRATION FIRING

Date: 21 February 1950

Time Started: 1030

Time Finished: 1200

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 24.3°F

Density: 1.106

Wind: ESE 8 mph

Weather: Scattered clouds Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .30 Ball, T-104

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	40-3/4	Lodged in 41st board.
2	43	Point protruding 1/4" beyond back of board.
3	42-3/4	Lodged in 43rd board.
4	42-1/2	Lodged in 43rd board.
5	43-1/4	Bullet fell to ground when board was removed.
6	42	Point barely protruding beyond rear of 43rd board.
7	44-1/2	Bullet fell to ground when board was removed.
8	43	Point protruding 1/2" beyond back of board.
9	42-1/2	Bullet fell to ground when board was moved.
10	44-1/2	Lodged in 45th board.

AVERAGE: 43

APPENDIX P

PENETRATION FIRING DATA

Date: 20 February 1950

Time Started: 1430

Time Finished: 1545

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 21° F

Density: 1.112

Wind: NW 25 mph

Weather: Clear

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg, Cal. .30 T-93 AP

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	42	Point protruding 1/4" beyond back of 42nd board.
2	42	Point barely through back of board.
3	48-3/4	Fell to ground after penetrating 3/4" on 49th board.
4	43	Point protruding 1/8" beyond rear of board.
5	41-1/2	Fell to ground after penetrating 1/2" on 42nd board.
6	42-3/4	Lodged in 43rd board.
7	42	Bullet protruding almost entire length beyond 42nd board.
8	42	Bullet protruding 1/8" beyond back of board.
9	41-3/4	Lodged in 42nd board.
10	40	Slight indent in 41st board.

AVERAGE: 42.50

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950

TIME STARTED:

TIME FINISHED:

Weapon, Type: T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperatures: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg, Cal. .30, API, T-101

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	52	Point protruding 1". Lodged in 52nd board.
2	52-1/4	Lodged in 52nd board.
3	52-1/4	Lodged in 52nd board.
4	41	Point protruding 1/8". Lodged in 41st board.
5	25	Core lodged in 25th board. Functioned on 14th board.
6	20	Core lodged in 25th board base first. Functioned on 15th board.
7	21	Core lodged in 21st board. Functioned on 15th board.
8	23	Core lodged in 23rd board. Functioned on 16th board.
9	26	Core lodged in 26th board. Functioned on 20th board.
10	20	Core lodged in 20th board base first. Functioned on 14th board.

AVERAGE: 33.25

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1030 Time Finished: 1200

Weapon, Type: U.K. EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 24.3°F

Density: 1.106

Wind: ESE 8 mph

Weather: Scattered clouds Range: 100 Yards

Target Type: 1" Pine boards

Toat Ammunition: Ctg. Cal. .280 Ball

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	34	Point protruding 1/2" beyond back of board.
2	33	Point protruding 1/8" beyond back of board.
3	36	Slight indent on 37 board (approximately 1/8").
4	34-1/2	Fell to ground when board removed.
5	33	Point barely protruding.
6	32-1/2	Lodged in 33rd board.
7	32-1/4	Bullet fell to ground when board moved.
8	32-1/4	Bullet fell to ground when board moved.
9	32-1/4	Bullet fell to ground when board moved.
10	35	Point protruding 1/16" beyond back of board.

AVERAGE: 33.50

APPENDIX P

PENETRATION FIRE TEST

Date: 21 February 1950

Time Started: 1430

Time Finished: 1545

Weapon, Type: U.M. EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 21°F

Density: 1.112

Wind: NW 25 mph

Weather: Clear

Range: 100 Yards

Target Type: 3" Pine Boards

Test Ammunition: Ctg, Cal., .280 AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS (Clearance - 156)</u>
1	30-1/2	Lodged in 31st board.
2	31-1/2	Lodged in 32nd board.
3	34-1/2	Lodged in 35th board.
4	36	Small mark on 37th board. Bullet fell to ground.
5	33-1/4	Fell to ground when board was moved.
6	33-1/4	Fell to ground when board was moved.
7	16	Lodged in 16th board base first.
8	32-1/2	Lodged in 33rd board.
9	31-3/4	Lodged in 32nd board.
10	33	Point protruding 1/8" beyond back of board.

AVERAGE: 31.25

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950

Time Started:

Time Finished:

Weapon, Type: E-2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .280, API

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS - (Clearance - 156)</u>
1	37	Point protruding 1/2". Lodged in 37th board.
2	35-1/4	Lodged in 36th board.
3	34	Point protruding 1/8". Lodged in 34th board.
4	33-3/4	Lodged in 34th board.
5	34-3/4	Lodged in 35th board.
6	37	Point protruding 1/2". Lodged in 37th board.
7	36-1/4	Lodged in 37th board.
8	33	Point protruding 1/4". Lodged in 33rd board.
9	33-1/4	Lodged in 34th board.
10	33-3/4	Lodged in 34th board.

AVERAGE: 34.75

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950

Time Started: 1445

Time Finished: 1535

Weapon, Type: U. S. M25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 24.3°F

Density: 1.106

Wind: ESE, 8 mph

Weather: Clear

Range: 300 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, Ball, T104

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	31	PP 1/16".
2	30	PP 1/8".
3	30-1/2	Lodged in 31st board.
4	30-1/2	Lodged in 31st board.
5	31-1/2	Lodged in 32nd board.
6	30-3/4	Lodged in 32nd board.
7	30-1/2	Fell to ground.
8	31-3/4	Fell to ground.
9	31-1/4	Fell to ground.
10	30-5/4	Lodged in 31st board.
		Average 30.75

PP ~ Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: 1300 Time Finished: 1445  
Weapon, Type: T25, U. S. Weapon No.: 10 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.3°F  
Density: 1.106 Wind: ESE, 8 mph Weather: Clear Range: 300 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	30-3/4	Lodged in 31st board.
2	31-1/4	Lodged in 32nd board.
3	30-1/4	Fell to ground.
4	30-1/2	Lodged in 31st board.
5	31	Point barely through board.
6	31	Point protruding 1/8" beyond back of board.
7	30-1/2	Lodged in 31st board.
8	31	PP 1/2".
9	31	PP 1/2".
10	31-1/4	Fell to ground.

Note: PP - Point protruding beyond back of board.

Average 30.75

APPENDIX P

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PENETRATION FIRING DATA

Date: 21 February 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 300 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, API, T101

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	35-1/4	Lodged in 36th board.
2	35-1/4	Lodged in 36th board.
3	36	PP 1/8". Lodged in 36th board.
4	35	PP 1/4". Lodged in 35th board.
5	35	PP barely. Lodged in 35th board.
6	35-1/4	Lodged in 34th board.
7	34	PP 1/4". Lodged in 34th board.
8	33	PP barely. Lodged in 33rd board.
9	37	PP 1/8". Lodged in 37th board.
10	35	PP 1/8". Lodged in 35th board.

Note: PP - Point protruding beyond back  
of board.

Average 34.75

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3

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950      Time Started: 1445      Time Finished: 1535  
Weapon, Type: UK EM2      Weapon No.: 3      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 24.3°F  
Density: 1.106      Wind: ESE, 8 mph      Weather: Clear      Range: 300 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	24-1/4	Fell to ground. PP 1/4".
2	24	Lodged in 24th board.
3	24-3/4	Lodged in 24th board.
4	24-1/2	Lodged in 24th board.
5	24-1/2	Lodged in 24th board.
6	25	PP 1/16".
7	27	PP 1/2".
8	26	PP barely.
9	27-1/2	Lodged in 26th board.
10	27	PP 1/8".
average		25.50

PP = Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950      Time Started: 1300      Time Finished: 1445  
Weapon, Type: UK E 2      Weapon No.: 3      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 24.3°F  
Density: 1.106      Wind: ESE, 8 mph      Weather: Clear      Range: 300 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .200, AP

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	23-1/2	Lodged in 24th board.
2	24-1/2	Lodged in 25th board.
3	24-5/4	Lodged in 26th board.
4	21-5/4	Lodged in 22nd board.
5	23	Point protruding 1/3" beyond back of board.
6	21-5/4	Lodged in 22nd board.
7	21	PP 1".
8	20-1/2	Lodged in 21st board.
9	25-1/2	Lodged in 25th board.
10	22-1/4	Fell to ground.

Average 22.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 21 February 1950 Time Started: Time Finished:  
Weapon, Type: E-2 Weapon No.: 3 Previous Rounds: 87  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Clear Range: 300 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	25	PP barely. Lodged in 23rd board. No function.
2	23-1/4	Lodged in 24th board. No function.
3	22	PP 1/3". Lodged in 22nd board. No function.
4	22	PP 1/4". Lodged in 22nd board. No function.
5	22-1/2	Lodged in 25rd board. No function.
6	22-1/4	Lodged in 23rd board. No function.
7	23-3/4	Lodged in 24th board. No function.
8	24-1/2	Lodged in 25th board. No function.
9	22	PP 1/2". Lodged in 22nd board. No function.
10	23	PP 1-1/2". Lodged in 23rd board. No function.

Average 22.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 February 1950 Time Started: 1120 Time Finished: 1410  
Weapon, Type: U. S. M25 Weapon No.: 10 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 36°F  
Density: 1.055 Wind: W.W., 27 mph Weather:  
Target Type: 1" Pine Boards Range: 600 yd  
Test Ammunition: Cartridge, Caliber .30, Ball, T104

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS	
1	16-1/2	Lodged in 17th board.	
2	15-1/4	Lodged in 16th board.	
3	15	PP 3/4".	
4	17	PP 1".	
5	16-1/2	Lodged in 17th board.	
6	16	PP barely.	
7	16-1/4	Lodged in 17th board.	
8	15-3/4	Lodged in 16th board.	
9	15-3/4	Lodged in 16th board.	
10	16	PP 1".	
11	16-1/4	Lodged in 17th board.	

Average 16

PP - Point protruding.

APPENDIX P

PENETRATION FIRING

Date: 23 February 1950 Time Started: 1020 Time Finished: 1120  
Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 56°F  
Density: 1.055 Wind: WNW, 27 mph Weather: Overcast Range: 600 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .30, AP, T93

HIT NO.	NO. OF BOARDS		REMARKS
	PENETRATED	MISSSED	
1	16		PP 1/2" on 16th board.
2	16		PP barely.
3	16		PP 1/4".
4	16		PP 1/16".
5	15-1/4		Lodged in 16th board.
6	18		PP 1/16".
7	15-1/2		Lodged in 15th board.
8	15-1/4		Lodged in 16th board.
9	15-3/4		Lodged in 16th board.
10	15-3/4		Lodged in 16th board.
			Average 16

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 25 February 1950 Time Started: 1135 Time Finished:  
Weapon, Type: T25 Weapon No.: 10 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Overcast Range: 600 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .50, API, T1C1

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
		PP
1	18	PP barely. Lodged in 13th board.
2	18	PP 1/8". Lodged in 18th board.
3	18	PP 1/4". Lodged in 16th board.
4	17-1/4	Lodged in 18th board.
5	18	PP 1/2". Lodged in 18th board.
6	18	PP 1/4". Lodged in 18th board.
7	18-1/4	Lodged in 19th board.
8	18-1/4	Lodged in 19th board.
9	18-1/4	Lodged in 19th board.
10	19-1/4	Lodged in 20th board.

Average 18.25

PP = Point protruding.

APPENDIX P

- PENETRATION FIRING DATA -

Date: 25 February 1950

Time Started: 1120

Time Finished: 1410

Weapon, Type: UK B.M.C.

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 36°F

Density: 1.055

Wind: WNW, 27 mph

Weather:

Range: 600 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	NO. OF BOARDS PENETRATED ***	REMARKS
		PP
1	12-1/2	Lodged in 13th board.
2	14-1/2	Lodged in 15th board.
3	14-1/4	Lodged in 15th board.
4	14-1/4	Lodged in 15th board.
5	14	PP 1/4".
6	15-1/4	Lodged in 16th board.
7	14-3/4	Lodged in 16th board.
8	14	PP barely.
9	13	PP 3/4".
10	16	PP 1/2".
Average 14.25 ..		

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 February 1950

Time Started: 1020

Time Finished: 1120

Weapon, Type: UK E12

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 36°F

Density: 1.055

Wind: WSW, 27 mph

Weather: Overcast

Range: 600 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	NO. OF BOARDS PENETRATED		REMARKS
	1	12	
2	15		No mark on 16th board.
3	12		Slight break on back of 12th board.
4	11-1/2		Lodged in 12th board.
5	11-5/4		Lodged in 12th board.
6	11		PP 1/4".
7	11-1/2		Lodged in 12th board.
8	12		PP 1/4".
9	10-1/2		Lodged in 11th board.
10	11		PP 1/4".
11	11-1/2		Lodged in 12th board.

Average 11.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 25 February 1950

Time Started: 1105

Time Finished: 1150

Weapon, Type: L12

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Overcast

Range: 600 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .280, API

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	11	PP 1 $\frac{1}{4}$ ". Lodged in 11th board.
2	11-1/2	Lodged in 12th board.
3	11-1/4	Lodged in 12th board.
4	10-3/4	Lodged in 11th board.
5	10-1/4	Lodged in 11th board.
6	11	PP 1 $\frac{1}{4}$ ". Lodged in 11th board.
7	11	PP 3 $\frac{1}{4}$ ". Lodged in 11th board.
8	11-3/4	Lodged in 11th board.
9	10-1/4	Lodged in 11th board.
10	9	PP barely. Lodged in 9th board.

Average 10.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1950      Time Started: 1025      Time Finished: 1030  
Weapon, Type: M1 105mm (U.C)      Weapon No.: 839252      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 26.3°F  
Density: 1.002      Wind: NW 24 mph      Weather: Clear      Range: 800 yards  
Target type: 1" Peru Board's  
Test Ammunition: Cartridge Caliber .30 Ball, T-204

TEST NO.	NO. OF PIERCINGS PENETRATED	REMARKS	
		PP	PP
1	9	PP 1/2"	
2	C-3/4	Lodged in 9th board.	
3	C-1/2	Lodged in 9th board.	
4	C-1/2	Lodged in 9th board.	
5	C-1/2	Lodged in 9th board.	
6	C-3/4	Lodged in 9th board.	
7	C-3/4	Lodged in 9th board.	
8	C	PP 1/2"	
9	C	PP 1/2"	
10	8	PP 1/2"	

PP - Point protruding behind board.  
Average: C-50

APPENDIX P

PENETRATION FIRING DATA

Date: 20 Feb 1950 Time Started: 1005 Time Finished: 1025  
Weapon, Type: M3 1919A4 (US) Weapon No.: 839252 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 67.3°F  
Density: 1.012 Wind: NNE 24 mph Weather: Clear Range: 300 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .30, AP, T-63

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
		PP
1	9-1/4	Lodged in 10th board.
2	2-1/2	
3	3	Slight indent in 9th board.
4	2-3/4	Lodged in 6th board.
5	2-1/2	Lodged in 5th board.
6	2-3/4	Lodged in 5th board.
7	2	PP 1/2".
8	2	PP 1/8".
9	2	IP barely.
10	2	IP 1/2"

PP - Point protruding behind board.  
Average: 8.50

APPENDIX P

PENETRATION FIRING DATA

Date: 5/1/68 10:50 Time Started: Time Finished:  
Weapon, Type: M-16A1 (7.62) Weapon No.: 100252 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 60°F  
Density: 1.074 Wind: 10° 7 mph Weather: Rain Range: 100 yards  
Target Type: 1" Fibre Board  
Test Ammunition: Cartridge, Caliber .30, API - F-121

TEST NO.	IN. ON 11TH BOARD	REMARKS
1	10-3/4	Lodged in 11th board. No function.
2	10-3/4	Lodged in 11th board.
3	10-3/4	Lodged in 11th board.
4	10-3/4	Lodged in 11th board.
5	11-1/4	Lodged in 11th board.
6	11-1/4	Lodged in 11th board.
7	11-1/4	Lodged in 12th board.
8	11-1/4	Lodged in 12th board.
9	11-1/2	Lodged in 12th board.
10	11-1/2	Lodged in 12th board.
11	11-1/4	Lodged in 12th board.
12	11-1/4	Lodged in 12th board.

Average 11.25

APPENDIX P

PENETRATION FIRING TEST

Date: 27 Jun 1968 Time Started: 0955 Time Finished: 1005  
Weapon, Type: M3 105mm (Canadian) Weapon No.: C1 4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 71.3°F  
Density: 1.032 Wind: W 24 mph Weather: Clear Range: 100 Yards  
Target Type: 1" x 1" Targets  
Test Ammunition: Cartridge, Caliber .30, Ball

PIG NO.	IN. OF POUNDS	MARKS	
		FRONT	REAR
1	8-1/2	Lodged in 10th board.	
2	9	PP 1"	
3	7	PP 1/2"	
4	8-1/2	Lodged in 9th board.	
5	8	PP 1-1/4". Slight dent in 9th board.	
6	8-1/2	Lodged in 9th board.	
7	8-3/4	Lodged in 9th board.	
8	8	Lodged in 9th board.	
9	8-1/4	PP 1/4"	
10	8-1/4	Lodged in 9th board.	

PP = Point protruding behind board.  
Average 1.75

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1960 Time Started: 0930 Time Finished: 0950  
Weapon, Type: M19 105mm (Canadian) Weapon No.: CWT 4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 15.3°F  
Density: 1.00 Wind: W 24 mph Weather: Clear Range: 700 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .300 AP

TEST NO.	C. O. G. TESTS		AVERAGE
	TEST NUMBER	DEPTH IN INCHES	
1		7-1/2	Lodged in 6th board.
2		7-3/4	Lodged in 6th board.
3		8	" "
4		9	1 1/16"
5		10	2 1/2"
6		11	7/16"
7		12	7/16"
8		13	1 1/2"
9		14	Lodged in 10th board.
10		15	7/16"

LF = Fairly penetrating behind board.  
Average: 7.75

## APPENDIX P

## PENETRATION FIRING DATA

Date: Feb 11, 1981

Time Started:

**Time Finished:**

Weapon, Type: M16A1/4 (Carbine)      Weapon No.: 11-13 Previous Rounds:

Weapon No. 1

**Previous Pounds:**

#### Irradiation Temperature: Ambient

Daily Temperature at 1200 Hours.

### Density:

## Wind

Weather. 101

### Range 1

**Target Type:** 10 large islands

**Test Ammunition:** 200-grain, 7.62-mm., M1943.

<u>NO. OF POUNDS</u>	<u>PERCENTAGE</u>	<u>REASONS</u>
1	26	PP 2/3% added in 10th board. No function.
2	22	PP 1/3% added in 10th board.
3	20	PP 1/3% added in 10th board.
4	21	PP 1/3% added in 10th board.
5	21	PP 1/3% added in 10th board.
6	21-1/2	PP 1/3% added in 10th board.
7	21-1/2	PP 1/3% added in 10th board.
8	21	PP 1/3% added in 10th board.
9	21-1/2	PP 1/3% added in 10th board.
10	21	PP 1/3% added in 10th board.

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17 pages. \$1.00.

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Oct 1950

Time Started: 1300

Time Finished:

Weapon, Type: M1 1916A4 (I. S.)

Weapon No.: 829252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 70.3°

Density: 1.012

Wind: NW 24 mph

Weather: Clear

Range: 1000 Yards

Target Type: 1/4" Pine Boards

Test Ammunition: Cartridge, Caliber .30 Ball, T-104

WIT NO.	NO. OF HOLES PENETRATED	REMARKS	
		PP	PP
1	6		Slight crack on back of board.
2	6	PP	1/8"
3	6	PP	1"
4	6	PP	1/4"
5	6	PP	1/2"
6	6	PP	1/4"
7	5-3/4	Lodged in 4th board.	
8	5-3/4	Lodged in 4th board.	
9	5-3/4	Lodged in 4th board.	
10	6	PP	1/4"

PP = Point protruding behind board.  
Average: 1/4"

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1968

Time Started: 1145

Time Finished: 1150

Weapon, Type: M61 20mm (U.S.)

Weapon No.: 630252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 28.9° F

Density: 1.022

Wind: NW 24 mph

Weather: Clear

Ranges: 1000 Yards

Target Type: 1" Pipe Boards

Test Ammunition: G-1000, G-100, G-10, G-9

TEST NO.	M. IN. LOADS	REMARKS
1	6	PP 1/2"
2	5-3/4	PP 1/16"
3	5-1/2	Lofted in 4th board.
4	5-1/4	Lofted in 5th board.
5	5-1/2	PP 1/16"
6	5-1/4	Lofted in 5th board.
7	5-1/2	Lofted in 6th board.
8	5-1/4	Lofted in 6th board.
9	5-1/2	Lofted in 6th board.
10	5-1/4	PP barely.

PP - Point protruding behind board.  
Average: 6

1046

APPENDIX P

PENETRATION FIRING DATA

Date: 17 Oct 1960

Time Started:

Time Finished:

Weapon, Type: M-101A4 (U.S.)

Weapon No.: 620250

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Rain

Range: 1000 Yards

Target Type: 1" Lime Green

Test Ammunition: Cartridges, Ballistic .30, API, C-101.

HED NO.	NO. OF PDS PTS	NOTES	
		PP	BB
1	0-1/8	Locked in 9th board.	No function.
2	0-1/4	Locked in 9th board.	No function.
3	0-1/2	Locked in 9th board.	No function.
4	0-1/4	Locked in 9th board.	No function.
5	0-1/2	Locked in 9th board.	No function.
6	0-1/2	Locked in 9th board.	No function.
7	0-1/2	Locked in 9th board.	No function.
8	0-1/2	Locked in 9th board.	No function.
9	0-1/2	Locked in 9th board.	No function.
10	0-1/2	Locked in 9th board.	No function.
11	0	0-1/8 Locked in 9th board.	No function.

Average: 0.5

PP = point protruding behind board.

APPENDIX P

PENETRATION FIRING DATA

Date: 27 Jul 1950 Time Started: 1135 Time Finished: 1146  
Weapon, Type: P-1 1000 A (Canadian) Weapon No.: C-4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 27.3°  
Density: 1.092 Wind: NW 24 mph Weather: Clear Range: 1000 Yards  
Target type: 1" Lime Targets  
Test Ammunition: Cervilite, Caliber .500 Ball

W.F. NO.	W. OF HOLE(S) PENETRATED	REMARKS
1	6-3/4	Loosed in 7th board. by 1/2".
2	6	1-1/2".
3	6	1-1/2".
4	6-3/4	Loosed in 6th board. by 1/2".
5	6-1/2	Loosed in 6th board. by 1/2".
6	6-3/4	Loosed in 6th board. by 1/2".
7	6	1-1/2".
8	6	1-1/2".
9	6	1-1/2".
10	6	1-1/2".
		DP = Det. probably behind board. Average: 6

~~SECRET~~ APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1960 Time Started: 1110 Time Finished: 1130  
Weapon, Type: M61 20mm (Mod. 1) Weapon No.: 67 4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 20.3°F  
Density: 1.030 Wind: W. 14 mph Weather: Clear Range: 1000 Yards  
Target Type: 12 ft. x 12 ft.  
Test Ammunition: Cartridge, Colder .070 AP

TEST NO.	NO. OF SHOTS	LEADS
1	2-3/4	Lodged in 6th board.
2	2-1/2	Lodged in 6th board.
3	2-1/2	Lodged in 6th board.
4	5	TP 3/4".
5	5	TP 3/4"
6	2-3/4	Lodged in 5th board.
7	2-3/4	Lodged in 5th board.
8	2-3/4	Lodged in 5th board.
9	2-3/4	Lodged in 5th board.
10	5	TP 1/2"

TP = Point protruding behind board.  
Distance: 5

## APPENDIX P

PENETRATION FIRING DATA

Date: 27 Feb 1944 Time Started: Time Finished:  
Weapon, Type: M1 105.4 (Canadian) Weapon No.: C1 4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Rain Range: 1000 Yards  
Current Weather: 10-15 Miles  
Lost Ammunition: Mortaridge, Gillies .303, anti

ITEM NO.	NO. OF BOARDS IN THE TUB	DESCRIPTION
1	8-1/2	Lodging in 8th board.
2	8	17 barely Lodged in 8th board.
3	7-1/2	17 barely Lodged in 8th board.
4	7-1/2	17 barely Lodged in 8th board.
5	7-1/2	17 barely Lodged in 8th board.
6	7-1/2	17 barely Lodged in 8th board.
7	7-1/2	17 barely Lodged in 8th board.
8	7-1/2	17 barely Lodged in 8th board.
9	7-1/2	17 barely Lodged in 8th board.
10	7-1/2	17 barely Lodged in 8th board.

$\Delta P = \text{Partial pressure of oxygen} - \text{Partial pressure of carbon dioxide}$

APPENDIX P

PENETRATION FIRING DATA

Date: 20 February 1950 Time Started: 11:45 Time Finished: 1530  
Weapon, Type: BNC 100CAH, U.S. Weapon No.: 639252 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 71.3°F  
Density: 1.079 Wind: S, 11 mph Weather: Clear Range: 1200 yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .30, Ball, T-1C4

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	4-1/4	Lodged in 5th board.
2	4	PP Barely
3	4	PP Barely
4	4	PP Barely
5	4	PP 1/4"
6	3-3/4	Lodged in 4th board.
7	3-1/2	Lodged in 4th board.
8	3-3/4	Lodged in 4th board.
9	4	PP 1/8
10	3-3/4	Lodged in 4th board.

Average 3.72

PP= Point protruding

APPENDIX P

PENETRATION FIRING DATA

Date: 26 February 1950 Time Started: 1405 Time Finished: 1440

Weapon, Type: M1919A1, U.S. Weapon No.: 639252 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 1200 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, AP, T-93.

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS	
1	4	PP 1/3"	
2	5	PP 1/6"	
3	4	PP 1/4"	
4	3-3/4	Lodged in 4th board.	
5	3-3/4	Lodged in 5th board.	
6	3-3/4	Lodged in 4th board.	
7	4	PP 1/6"	
8	3-3/4	Lodged in 4th board.	
9	4	PP Barely	
10	4	PP 1/4"	

Average 4

\* PP = Point protruding.

## ENDIX P

PENETRATION FIRING DATA

Date: 26 February 1950      Time Started:      Time Finished:

Weapon, Type: PGM 1917A1, U.S.      Weapon No.: 839252      Previous Rounds:

Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 49°F

Density: 1.032      Wind: SE, 4 mph      Weather: Clear      Range: 1200 yd

Target Type: 1" Pine Board

Test Ammunition: Cartridge, Caliber .30, API, T-101

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	6-1/4	Lodged in 7th board. No function.
2	6-3/4	
3	6-1/4	
4	5-1/2	Lodged in 6th board.
5	6-1/2	Lodged in 7th board.
6	5-3/4	
7	7	PP 1"
8	5-3/4	Lodged in 6th board.
9	7-1/2	Lodged in 8th board.
10	7-1/4	Lodged in 8th board.
		Average 6.5

PP = Point Protruding

APPENDIX P

PENETRATION FIRING DATA

Date: 28 February 1950 Time Started: 1345 Time Finished: 1400

Weapon, Type: B.C. 1917M, Canadian Weapon No.: CW 1433 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Winds Weather: Range: 1200 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .300, Ball

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	5-1/2	Lodged in 6th board.
2	5-1/2	Lodged in 6th board.
3	5	PP 1/8"
4	5	PP Barely
5	4-1/2	Lodged in 5th board.
6	4-3/4	Lodged in 5th board.
7	4-3/4	Lodged in 5th board.
8	4-1/2	Lodged in 5th board.
9	4-1/2	Lodged in 5th board.
10	4	Lodged in 4th board.

Average 4.75

PP = Point Protruding

APPENDIX P

PENETRATION FIRE TEST

Date: 28 February 1950 Time Started: 0930 Time Finished: 1340

Weapon, Type: B.M.C 1919A4, Canadian Weapon No.: CW 4133 Previous Pounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 1200 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS	
1	3	PP 3/4"	
2	3	PP 1"	
3	3	PP 1 1/2"	
4	3	PP 1 1/2"	
5	3-1/4	Lodged in 4th board.	
6	3-3/4	Lodged in 1th board.	
7	3-1/2	Lodged in 1th board.	
8	3-1/2	Lodged in 1th board.	
9	3-3/4	Lodged in 1th board.	
10	3-1/2	Lodged in 1th board.	

Average 3.25

PP = Point Protruding

247

APPENDIX P

PENETRATION FIRING DATA

Date: 28 February 1950

Time Started:

Time Finished:

Weapon, Type: B.C.G. 1919A1, Canadian

Weapon No.: 014433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 yd

Target Type: 1" Pine boards

Test Ammunition: Cartridge, Caliber .280, A.T.

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS	
1	4-3/4	Lodged in 5th board.	No function.
2	5-1/2	Lodged in 6th board.	
3	4-3/4	Lodged in 5th board.	
4	5-1/4	Lodged in 6th board.	
5	4-3/6	Lodged in 5th board.	
6	4-1/4	Lodged in 5th board.	
7	5-1/2	Lodged in 6th board.	
8	5-1/2	Lodged in 6th board.	
9	5-1/2	Lodged in 6th board.	
10	5-1/4	Lodged in 6th board.	

Average 5.00

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950

Time Started:

Time Finished:

Weapon, Type: BMG 1919A4 (U.S.)

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 50.5°F

Density: 1.024

Wind: WNW, 25 mph

Weather: Overcast

Range: 1600 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, Ball, T104

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	1-3/4	Lodged in 2nd board.
2	1-3/4	Lodged in 2nd board.
3	1-2/4	Lodged in 2nd board.
4	2	PP 1/16",
5	3	PP 1/2".
6	3	PP 1/16".
7	3	PP 1/16".
8	2-1/2	Lodged in 3rd board.
9	3	PP 1".
10	3-1/4	Lodged in 4th board.

Average 2.50

PP = Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950

Time Started:

Time Finished:

Weapon, Type: M1919A4 (U.S.)

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Overcast

Range: 1600 yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .30, AF, T93

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	3	PP 1/4".
2	3	PP 1/4".
3	3	PP barely.
4	3	PP barely.
5	3	PP barely.
6	3	PP barely.
7	3	PP barely.
8	3	PP barely.
9	2	PP barely.
10	3	PP 1/2".

Average 3.00

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950      Time Started:      Time Finished:  
Weapon, Type: M1 1919A4 (U.S.)      Weapon No.: 639252      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours:  
Density:      Wind:      Weather: Clear      Range: 1600 Yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .30, API, T101

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	3-3/4	Lodged in 4th board. No function.
2	3-1/2	Lodged in 4th board.
3	4-1/4	Lodged in 5th board.
4	h	PP 1-1/4".
5	3-3/4	Lodged in 4th board.
6	3-1/2	Lodged in 4th board.
7	3-1/4	Lodged in 4th board.
8	3-1/4	Lodged in 4th board.
9	3-3/4	Lodged in 4th board.
10	3-3/4	Lodged in 4th board.
		Average 3.75

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950

Time Started:

Time Finished:

Weapon, Type: FNC 1919A1 (Canadian)

Weapon No.: OW 4433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Overcast

Range: 1600 Yd

Target Type: 1" Pine Boards

Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	3	PP 1/2".
2	3	PP 1 1/4".
3	3	PP 1/8".
4	3	PP 1/4".
5	2-1/2	Lodged in 3rd board.
6	2-3/4	Lodged in 3rd board.
7	3-1/4	Lodged in 4th board.
8	3	PP 1/4".
9	3	IP 1/8".
10	3	PP 1/2".

Average 3

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 1 March 1950      Time Started:      Time Finished:  
Weapon, Type: B.M.G 1919A4 (Canadian)      Weapon No.: OW 4433      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours:  
Density:      Wind:      Weather: Overcast      Range: 1600 Yd  
Target Type: 1" Pine Boards  
Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	NO. OF BOARDS <u>PENETRATED</u>	REMARKS
1	3-1/4	Lodged in 4th board.
2	2	PP 3/4". Lodged in 2nd board.
3	3-1/2	Lodged in 4th board.
4	3	PP 1/2". Lodged in 3rd board.
5	3	PP 3/4". Lodged in 3rd board.
6	3	PP 1/2". Lodged in 3rd board.
7	3	PP 3/4". Lodged in 3rd board.
8	2-3/4	Lodged in 3rd board.
9	3-3/4	Lodged in 4th board.
10	3-1/4	Lodged in 4th board.

Average 3.00

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: M.G. 191.4 (Canadian) Weapon No.: CM 4'33 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 1600 Yd

Target Type: 1" fine cards

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	NO. OF BOARDS PUNCTURED	REMARKS
1	3	PP 1/8" on 3rd board. No function.
2	2-1/4	Lodged in 3rd board.
3	2-1/4	Lodged in 3rd board.
4	2-1/2	Lodged in 3rd board.
5	2-3/4	Lodged in 3rd board.
6	3-1/4	Lodged in 3rd board.
7	3-1/2	Lodged in 4th board.
8	3-1/2	Lodged in 4th board.
9	3-3/4	Lodged in 4th board.
10	2-3/4	Lodged in 3rd board.

Average 2.0

PP = Point penetrator.

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started:

Time Finished:

Weapon, Type: MG 1919A4 (U.S.)

Weapon No.:

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 45°F

Density: 1.100

Wind: NW 22 mph

Weather: Clear

Range: 2000 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .30. Ball T93

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	1	Point protruding 3/4"
2	1	Slight indent on 2nd board.
3	1	Slight indent on 2nd board.
4	1-3/4	Lodged in 2nd board.
5	1-3/4	Lodged in 2nd board.
6	1-1/2	Lodged in 2nd board.
7	1	Point protruding 3/4".
8	1-1/2	Lodged in 2nd board.
9	1	Point protruding 1/2"
10	1-1/4"	Lodged in 2nd board.

AVERAGE: 1.25

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: Time Finished:  
Weapon, Type: EMG 1919A4 (U.S.) Weapon No.: Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 45°F  
Density: 1.057 Wind: NW 22 mph Weather: Clear Range: 2,000 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Ctg. Cal. .30 AP, T93

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	1-1/4	
2	1	1/8" indent in 2nd board.
3	1-1/4	Lodged in 2nd board.
4	1	Slight indent in 2nd board.
5	1-1/2	Lodged in 2nd board.
6	1-1/4	Lodged in 2nd board.
7	1	Slight mark on 2nd board.
8	1	Point protruding 2/4".
9	1	1/4" indent in 2nd board. Bullet did not stick.
10	1-1/2	Lodged in 2nd board.

AVERAGE: 1.25

APPENDIX P

PENETRATION FIRING DATA

Date: 24 March 1950 Time Started: Time Finished:  
Weapon, Type: MG 1919A4 (U.S.) Weapon No.: 839252 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 53°F  
Density: 1.024 Wind: NW 23 mph Weather: Clear Range: 2,000 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Ctg. Cal. .30, API, T-101

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	1-3/4	Lodged in 2nd board. No function.
2	1-1/2	Lodged in 2nd board. No function.
3	1-3/4	Lodged in 2nd board. No function.
4	1-1/2	Lodged in 2nd board. No function.
5	1-3/4	Lodged in 2nd board. No function.
6	1-1/2	Lodged in 2nd board. No function.
7	1-1/4	Lodged in 2nd board. No function.
8	1-1/2	Lodged in 2nd board. No function.
9	1-3/4	Lodged in 2nd board. No function.
10	1-3/4	Lodged in 2nd board. No function.

AVERAGE: 1.60

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started:

Time Finished:

Weapon, Type: ENG 1919A4 (Canadian) Weapon No.: CW 4433 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1:00 Hours: 45°F

Density: 1.100

Wind: MNW 22 mph

Weather: Clear

Range: 2,000 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .280. Ball

HIT NO.	NO. OF BOARDS PENETRATED	REMARKS
1	1-3/4	Lodged in 2nd board.
2	1-1/2	Lodged in 2nd board.
3	1-3/4	Lodged in 2nd board.
4	1-3/4	Lodged in 2nd board.
5	1-3/4	Lodged in 2nd board.
6	1-3/4	Lodged in 2nd board.
7	1-1/2	Lodged in 2nd board.
8	1-3/4	Lodged in 2nd board.
9	1-3/4	Lodged in 2nd board.
10	1-3/4	Lodged in 2nd board.

AVERAGE: 1.75

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started:

Time Finished:

Weapon, Type: MG 1919A4 (Canadian) Weapon No.: OM 4433

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 45°F

Density: 1.100

Wind: NNW 22 mph

Weather: Clear

Range: 2000 Yards

Target Type: 1" Pine Boards

Test Ammunition: Ctg. Cal. .280 AP

<u>HIT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1-3/4	Lodged in 2nd board.
2	1-3/4	Lodged in 2nd board.
3	1-3/4	Lodged in 2nd board.
4	1-3/4	Lodged in 2nd board.
5	1-1/2	Lodged in 2nd board.
6	1-3/4	Lodged in 2nd board.
7	1-1/2	Lodged in 2nd board.
8	1-3/4	Lodged in 2nd board.
9	1-1/2	Lodged in 2nd board.
10	1-3/4	Lodged in 2nd board.

AVERAGE: 1.68

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950 Time Started: Time Finished:  
Weapon, Type: BMG 1919A4 (Canadian) Weapon No.: OW 4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Range: 2,000 Yards  
Target Type: 1" Pine Boards  
Test Ammunition: Ctg, Cal. .280 API

<u>HTT NO.</u>	<u>NO. OF BOARDS PENETRATED</u>	<u>REMARKS</u>
1	1	Point protruding 1". Lodged in 1st board. No function.
2	1	Point protruding 1". Lodged in 1st board. No function.
3	3/4	Did not remain in board.
4	3/4	Did not remain in board.
5	3/4	Did not remain in board.
6	3/4	Did not remain in board.
7	1-1/4	Lodged in 2nd board.
8	1-1/4	Lodged in 2nd board.
9	1-1/2	Lodged in 2nd board.
10	1/2	Did not remain in board.

AVERAGE - .95

APPENDIX

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1240 Time Finished: 1245

Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F

Density: 1.093 Wind: NW, 28 mph Weather: Clear Range: 25 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .50, Ball, T104

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	3	Penetrated 3rd plate on 75° to 100° yaw.
2	3	Hit 4th plate tail first. Small bulges on 4th plate.
3	3	Hit 4th plate tail first. Small bulges on 4th plate.
4	3	Hit 4th plate tail first. Small bulges on 4th plate.
5	3	Hit 4th plate tail first. Small bulges on 4th plate.
6	3	MB on 4th plate.
7	3	MB on 4th plate.
8	3	SB on 4th plate.
9	3	SB on 4th plate.
10	3	SB on 4th plate.
		All jackets stripped.
		Average 3.

APPENDIX P

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1345 Time Finished: 1410

Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F

Density: 1.093 Wind: NW, 28 mph Weather: Clear Range: 25 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, A1, T95

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Core lodged in 4th plate, PP 1/4".
2	4	Spatter and small bulge on 5th plate. Core shattered on 4th plate.
3	4	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
4	4	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
5	3	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
6	3	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
7	3	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
8	3	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
9	3	Spatter and small bulge on 4th plate. Core shattered on 3rd plate.
10	3	Spatter and small bulge on 4th plate. Core shattered on 3rd plate. Small to medium bulges on 4th and 5th plates. All jackets stripped.

Average

PENETRATION FIRING DATA

Date: 2 March 1950 Time Started: 1420 Time Finished: 1455  
Weapon, Type: U. S. T25 Weapon No.: 10 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F  
Density: 1.095 Wind: NW, 28 mph Weather: Clear Range: 25 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .50, API, T101

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	5	Medium bulge on 6th plate. Functioned on 2nd plate.
2	5	Core broke on 3rd plate. 1/2 of core penetrated to slight mark on 6th plate. Functioned on 2nd plate.
3	7	Small pin mark on 8th plate. Functioned on 2nd plate.
4	6	Rear of core embedded in 6th plate. Small bulge on 7th plate. Functioned on 2nd plate.
5	4	Rear of core embedded in 5th plate. Medium bulge on 5th plate. Functioned on 2nd plate.
6	5	Small bulge on 6th plate. Functioned on 2nd plate.
7	4	Small bulge on 5th plate. Functioned on 2nd plate.
8	5	Medium bulge on 6th plate. Functioned on 2nd plate.
9	7	Core lodged in 7th plate. Point protruding 1/2". Functioned on 2nd plate.
10	7	Very small bulge on 5th plate. Functioned on 2nd plate.

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 2 March 1950 Time Started: 1250 Time Finished: 1310

Weapon, Type: UK E12 Weapon No.: 3 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 24.5°F

Density: 1.095 Wind: NW, 28 mph Weather: Clear Range: 25 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	3	Medium bulge.
2	2	Core completely shattered. Medium to large bulges.
3	2	Showed partial punching. 2 cracks.
4	2	Showed partial punching. 2 cracks.
5	2	Showed partial punching. 2 cracks.
6	2	2 cracks.
7	2	2 cracks.
8	2	Medium bulge.
9	2	Medium bulge.
10	2	Medium bulge.
All jackets stripped.		
Average 2.1		

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 2 March 1950      Time Started: 1320      Time Finished: 1340  
Weapon, Type: UK EM2      Weapon No.: 3      Previous Rounds:  
Ammunition Temperature: Ambient.      Daily Temperature at 1200 Hours: 24.5°F  
Density: 1.035      Wind: NNE, 28 mph      Weather: Clear      Range: 25 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	3	Core shattered on 3rd plate. Entry hole shows yaw.
2	3	Core shattered on 3rd plate. Some spattering on 2nd plate.
3	3	Core shattered on 3rd plate. Bulges - small to medium on 4th plate.
4	3	
5	3	
6	3	
7	3	
8	3	
9	3	
10	3	

All jackets stripped.

Average 3

267

## APPENDIX P

PENETRATION FIRING DATA

Date: 2 March 1950      Time Started: 1345      Time Finished: 1415  
 Weapon, Type: UK EM2      Weapon No.: 3      Previous Rounds:  
 Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 56°F  
 Density: 1.110      Wind: SSW, 25 mph      Weather: Cloudy, misting      Range: 25 yd  
 Target Type: 10 Gauge Mild Steel Plate  
 Back Ammunition: Cartridge, Caliber .280, API

TEST NO.	NO. OF PLATES PENETRATED	REMARKS	
1	4	Small scratches on 5th plate.	Functioned on 1st plate.
2	4	Small scratches on 5th plate.	Functioned on 1st plate.
3	4	Small bulge on 5th plate.	Functioned on 1st plate.
4	5	Small bulge on 6th plate.	Functioned on 1st plate.
5	5	Small bulge on 6th plate.	Functioned on 1st plate.
6	4	Core lodged in 5th plate. Pin hole through 5th plate.	Functioned on 1st plate.
7	4	Medium bulge on 5th plate.	Functioned on 1st plate.
8	3	Small bulge on 4th plate.	Functioned on 1st plate.
9	5	Small bulge on 6th plate.	Functioned on 1st plate.
10	3	Small bulge on 4th plate.	Functioned on 1st plate.

Average 4.1

APPENDIX

PENETRATION FIRING DATA

Date: 3 March 1950

Time Started:

Time Finished:

Weapon, Type: U.S., T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 26°F

Density: 1.100

Wind: N, 23 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, Ball, T-101

WIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	Small dents on face of 5th plate.
2	4	Small dents on face of 5th plate.
3	2	Medium bulge.
4	2	Circumference crack 50%.
5	3	Circumference crack 10%.
6	2	Circumference crack 50%.
7	3	Large bulge.
8	3	Large bulge.
9	2	Medium bulge.
10	3	Medium bulge.
Average 3.2		

APPENDIX

PERETRATION FIRING DATA

Date: 3 March 1950      Time Started:      Time Finished:  
Weapon, Type: U.S., I-95      Weapon No.: 10      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 25°  
Density: 1.100      Wind: N, 25 mph      Weather: Clear      Range: 100 yd  
Target Type: 10 Gauge Mill Steel Plate  
Test Ammunition: Cartridge, Caster .30, AP, I-95.

R/T NO.	NO. OF PLATES PENETRATED	REMARKS
1	5	Medium bulge on 5th plate.
2	5	Medium bulge on 6th plate.
3	5	Medium bulge on 6th plate.
4	5	Medium bulge on 6th plate.
5	5	Core in plate. Point protruding 1/4".
6	4	Small bulge on 5th plate.
7	4	Small bulge on 5th plate.
8	4	Small bulge on 5th plate.
9	6	Core in plate. Point protruding 1/8".
10	6	Small bulge on 7th plate.

Average 4.9

APPENDIX P

PERFORATION FIRING DATA

Date: 3 March 1950

Time Started: 1045

Time Finished: 1135

Weapon, Type: U.S., T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 25°F

Density: 1.100

Wind: N, 23 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, API, T-101

KIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Medium bulge on 5th plate. Functioned on 2nd plate.
2	5	Core lodged in 6th plate. Functioned on 2nd plate.
3	6	No mark on 7th plate. Functioned on 2nd plate.
4	4	Small bulge on 5th plate. Functioned on 2nd plate.
5	4	Medium bulge on 5th plate. Functioned on 2nd plate.
6	5	Core lodged in 6th plate. Functioned on 2nd plate.
7	5	Core lodged in 6th plate. Functioned on 2nd plate.
8	4	Medium bulge on 5th plate. Functioned on 2nd plate, core broke.
9	5	Small bulge on 5th plate. Functioned on 2nd plate.
10	4	Medium bulge on 5th plate. Functioned on 2nd plate, core broke.

Average 4.6

271

APPENDIX P

PENETRATION FIRING DATA

Date: 3 March 1950 Time Started: Time Finished:  
Weapon, Type: U.K., EM2 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 70°  
Density: 1.100 Wind: N, 23 mph Weather: Clear Range: 100 yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, caliber .280, ball

TEST NO.	NO. OF PLATES PENETRATED	REMARKS								
1	2	Large bulge.								
2	2	Large bulge, circumference crack. Point of core mushrooming.								
3	2	Large bulge, circumference crack.								
4	2	Large bulge, punching started.								
5	2	Large bulge.								
6	2	Medium bulge.								
7	2	Medium bulge.								
8	2	Medium bulge.								
9	2	Medium bulge.								
10	2	Medium bulge.								
Average 2										

APPENDIX P

PENETRATION FIRING DATA

Date: 5 March 1950

Time Started:

Time Finished:

Weapon, Type: U.K., LIP

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 28°F

Density: 1.100

Wind: 5, 23 mph

Weather: Clear

Range: 100 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .260 AP

WIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Star cracks and pin hole penetration on 5th plate.
2	4	Star cracks on 5th plate.
3	4	SP on 5th plate.
4	4	Slight spotter on 5th plate.
5	3	Small hole in 4th plate and 1s.
6	3	SB, core broke.
7	3	SB, core broke.
8	3	SB, core broke.
9	3	SB, core broke.
10	3	SB, core broke.

Average 3.4

APPENDIX P

PENETRATION FIRING DATA

Date: 3 March 1950

Time Started: 1045

Time Finished: 1135

Weapon, Type: U.H., EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 28°F

Density: 1.100

Wind: W, 23 mph

Weather: Clear

Range: 100 yd

Target type: 10 Gauge Mild Steel Plate

Type of Ammunition: Cartridge, Caliber .280, API.

FIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	Core lodged in 5th plate. Functioned on 1st plate.
2	4	Core lodged in 5th plate. Functioned on 1st plate.
3	4	Core lodged in 5th plate. Functioned on 1st plate.
4	4	Small bulge on 5th plate. Functioned on 1st plate.
5	4	Medium bulge on 5th plate. Functioned on 1st plate.
6	4	Medium bulge on 5th plate. Functioned on 1st plate.
7	4	Medium bulge on 5th plate. Functioned on 1st plate.
8	4	Medium bulge on 5th plate. Functioned on 1st plate.
9	4	Medium bulge on 5th plate. Functioned on 1st plate.
10	4	Core lodged in 5th plate. Functioned on 1st plate.
Average		4

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1425

Time Finished: 1450

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.033

Wind: WNW 33

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg. Cal. .30. Ball. T-104

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	3	Small mark on face of 4th plate. No bulge.
2	2	LB on 3rd plate.
3	3	SB on 4th plate.
4	3	SB on 4th plate.
5	2	LB on 3rd plate.
6	3	SB on 4th plate.
7	2	LB on 3rd plate.
8	3	SB on 4th plate.
9	3	SB on 4th plate.
10	3	SB on 4th plate.

AVERAGE - 2.7

APPENDIX

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1315

Time Finished: 1410

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.093

Wind: WNW 33 mph

Weather: Clear

Ranges: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg, Cal. .30, AP. T-93

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	SB on 5th plate.
2	3	SB on 4th plate; core broke.
3	3	Core lodged in 4th plate; point protruding 1/4".
4	3	SB on 4th plate; core broke.
5	3	SB on 4th plate; core broke.
6	3	Core lodged in 4th plate; point protruding 1/4".
7	3	Core lodged in 4th plate; point protruding 1/4".
8	3	SB on 4th plate; core broke.
9	3	SB on 4th plate.
10	3	Core broke; point penetrating completely on 4th plate. Point fell from plate.

AVERAGE: 3.1

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1455

Time Finished: 1530

Weapon, Type: U.S. T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.033

Wind: NW 33 mph

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg. Cal. .30,-API, T-101

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	4	SE on 5th plate. Functioned on 2nd plate.
2	3	Core lodged in 4th plate; point protruding 3/4". Functioned on 2nd plate.
3	4	No mark on 5th plate; Functioned on 2nd plate.
4	4	Core lodged in 5th plate. Did not penetrate. Functioned on 2nd plate.
5	4	Core lodged in 5th plate. Did not penetrate. Functioned on 2nd plate.
6	4	SE on 5th plate. Functioned on 2nd plate.
7	3	Point protruding. Core fell from 4th plate. Functioned on 2nd plate.
8	2	LB on 3rd plate. Functioned on 2nd plate.
9	3	Point protruding on 4th plate. Core did not remain in 4th plate. Functioned on 2nd plate.
10	3	Point protruding on 4th plate. Core did not remain in 4th plate. Functioned on 2nd plate.

AVERAGE: 3.4

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1425

Time Finished: 1450

Weapon, Type: U.K. EM 2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 23.7°F

Density: 1.083

Wind: NW 33 mph

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg, Cal. .280. Ball.

HIT NO.	NO. OF PLATES PENETRATED	REMARKS		
1	1	LB	circumference crack	1/2
2	1	"	"	1/4
3	1	LB	"	1/2
4	1	LB	"	1/2
5	1	LB	"	No
6	1	LB	"	1/2
7	1	LB	"	1/4
8	1	LB	"	1/4
9	1	LB	"	1/2
10	1	LB	"	1/4

AVERAGE: 1

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1315

Time Finished: 1410

Weapon, Type: U.K. EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.083

Wind: WNW 33 mph

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg, Cal. .280, AP

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	3	SB on 4th plate.
2	2	Core lodged in 3rd plate; point protruding 1/4"
3	2	Core lodged in 3rd plate; point protruding 1/4"
4	2	SB on 3rd plate.
5	2	Core lodged in 3rd plate; point protruding 1/4"
6	2	Core lodged in 3rd plate; point protruding 1/4"
7	2	Core lodged in 3rd plate; point protruding 1/4"
8	2	Core lodged in 3rd plate; point protruding 1/4"
9	2	Core lodged in 3rd plate; point protruding 1/4"
10	3	Core lodged in 3rd plate; point protruding 1/2" SB on 4th plate.

AVERAGE: 2.2

APPENDIX P

PENETRATION FIRING DATA

Date: 6 March 1950

Time Started: 1455

Time Finished: 1530

Weapon, Type: U.K. EM2

Weapon No.: 3

Previous Rounds: 190

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 29.7°F

Density: 1.033

Wind: WNW 33 mph

Weather: Clear

Range: 300 Yards

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Ctg. Cal. .280, API

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	2	Core lodged in 3rd plate. Point protruding 1/4". Functioned on 1st plate.
2	2	Core lodged in 3rd plate. Point protruding 1/4". Functioned on 1st plate.
3	2	Core lodged in 3rd plate. Point protruding 1/4". Functioned on 1st plate.
4	3	SB on 4th plate. Functioned on 1st plate.
5	3	SB on 4th plate. Functioned on 1st plate.
6	2	Core lodged in 3rd plate. Point protruding 1/8". Functioned on 1st plate.
7	2	Core lodged in 3rd plate. Point protruding 1". Functioned on 1st plate.
8	2	Core lodged in 3rd plate. Point protruding 1". Functioned on 1st plate.
9	2	Core lodged in 3rd plate. Point protruding 1/8". Functioned on 1st plate.
10	3	Small nick in face of 4th plate. Functioned on 1st plate.

AVERAGE: 2.3

## APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950

Time Started: 1430

Time Finished: 1600

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 40°F

Density: 1.045

Wind: N, 10 mph

Weather: Rain

Range: 600 Yd

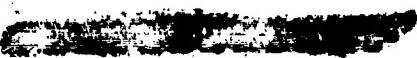
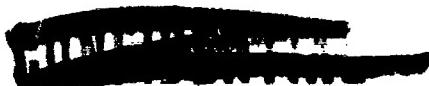
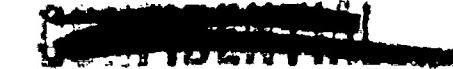
Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .50, Ball, T104

HIT NO.	NO. OF PLATES		REMARKS
	PENETRATED	MISSSED	
1	2		SB on 3rd plate.
2	1		Core lodged in 2nd plate. PP 1/2".
3	1		Core lodged in 2nd plate. PP 1/3".
4	1		Punching started on 2nd plate.
5	1		Punching almost complete on 2nd plate.
6	1		Core lodged in 2nd plate. PP 1/4".
7	2		SB on 3rd plate.
8	2		SB on 3rd plate.
9	2		Slight scratches on 3rd plate.
10	2		Slight scratches on 3rd plate.

Average 1.5

IP - Point protruding.



APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950 Time Started: 1330 Time Finished: 1355

Weapon, Type: T25 Weapon No.: 10 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F

Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, AP, T93

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Core lodged in 2nd plate. PP 3/4".
2	2	SB on 3rd plate. Jacket lodged in 1st plate.
3	2	SB on 3rd plate.
4	2	Slight mark on face of 3rd plate.
5	2	Slight mark on face of 3rd plate.
6	2	SB on 3rd plate. Jacket lodged in 1st plate.
7	2	SB on 3rd plate.
8	2	Slight mark on face of 3rd plate.
9	2	SB on 3rd plate.
10	2	SB on 3rd plate. Jacket lodged in 1st plate.

Average 1.9

\* PP = Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 12 March 1950 Time Started: 1045 Time Finished: 1130

Weapon, Type: T25 Weapon No.: 10 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F

Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, API, T101

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	2	SB on 3rd plate. Functioned on 1st plate.
2	2	SB on 3rd plate. Functioned on 1st plate.
3	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
4	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
5	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
6	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
7	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
8	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
9	2	Slight mark on face of 3rd plate. Functioned on 1st plate.
10	1	Core lodged 1/2 way through 2nd plate. Functioned on 1st plate.

Average 1.9

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950 Time Started: 1400 Time Finished: 1425  
Weapon, Type: M2 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F  
Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .30, Ball

<u>KIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Medium bulge on 2nd plate.
2	1	SB on 2nd plate.
3	1	SB on 2nd plate.
4	1	SB on 2nd plate.
5	1	SB on 2nd plate.
6	1	MB on 2nd plate.
7	1	SB on 2nd plate.
8	1	SB on 2nd plate.
9	1	MB on 2nd plate.
10	1	SB on 2nd plate. SB on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 13 March 1950 Time Started: 1300 Time Finished: 1525  
Weapon, Type: BM2 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 40°F  
Density: 1.048 Wind: N, 10 mph Weather: Rain Range: 600 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .280, AP.

KIT NO.	NO. OF PLATES PENETRATED	REMARKS	
1	1	LB on 2nd plate.	
2	1	Core lodged in 2nd plate. FP 1/8".	
3	1	Core lodged in 2nd plate. FP 1/4".	
4	1	Core lodged in 2nd plate. FP 1/4".	
5	1	Core lodged in 2nd plate. FP 1/8".	
6	1	Core lodged in 2nd plate. FP 1/8".	
7	1	Core lodged in 2nd plate. FP 1/8".	
8	1	Core lodged in 2nd plate. FP 1/8".	
9	1	Core lodged in 2nd plate. FP 1/8".	
10	1	Core lodged in 2nd plate. FP 1/8".	

Average 1

FP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950 Time Started: 1015 Time Finished: 1016  
Weapon, Type: BM2 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 46°F  
Density: 1.013 Wind: N, 10 mph Weather: Rain Range: 600 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .200, API

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	SB on 2nd plate. Functioned on 1st plate.
2	1	SB on 2nd plate. Functioned on 1st plate.
3	1	SB on 2nd plate. Functioned on 1st plate.
4	1	SB on 2nd plate. Functioned on 1st plate.
5	1	SB on 2nd plate. Functioned on 1st plate.
6	1	SB on 2nd plate. Functioned on 1st plate.
7	1	SB on 2nd plate. Functioned on 1st plate.
8	1	SB on 2nd plate. Functioned on 1st plate.
9	1	SB on 2nd plate. Functioned on 1st plate.
10	1	SB on 2nd plate. Functioned on 1st plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 11 March 1950      Time Started:      Time Finished:  
Weapon, Type: B-10 1013A4 (U.S.)      Weapon No.: 639252      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 54°F  
Density: 1.065      Wind: N.W., 19 mph      Weather: Clear      Range: 200 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, caliber .30, Ball, T-1C

HIT NO.	NO. OF PLATES	REMARKS
	PENETRATED	
1	1	Medium bulge on 2nd plate.
2	1	Medium bulge on 2nd plate.
3	1	Medium bulge on 2nd plate.
4	1	Medium bulge on 2nd plate.
5	1	Medium bulge on 2nd plate.
6	1	Medium bulge on 2nd plate.
7	1	Medium bulge on 2nd plate.
8	1	Medium bulge on 2nd plate.
9	1	Medium bulge on 2nd plate.
10	1	Medium bulge on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: Time Finished:  
Weapon, Type: M1919A1 (U.S.) Weapon No.: 839252 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Winds Weather: Range: 800 Yards  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .30, AP, T95

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Medium bulge on 2nd plate.
2	1	Medium bulge on 2nd plate.
3	1	Medium bulge on 2nd plate.
4	1	Medium bulge on 2nd plate.
5	1	Medium bulge on 2nd plate.
6	1	Medium bulge on 2nd plate.
7	1	Medium bulge on 2nd plate.
8	1	Medium bulge on 2nd plate.
9	1	Medium bulge on 2nd plate.
10	1	Medium bulge on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950 Time Started: Time Finished:

Weapon, Type: BNG 1919A4 (U.S.) Weapon No.: 839252 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 800 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .50, API, T101

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	Core lodged in 2nd plate. PP barely. Functioned on 1st plate.
2	1	Core lodged in 2nd plate. PP barely. Functioned on 1st plate.
3	1	Pinhole through 2nd plate. Functioned on 1st plate.
4	1	Pinhole through 2nd plate. Functioned on 1st plate.
5	1	Pinhole through 2nd plate. Functioned on 1st plate.
6	1	Pinhole through 2nd plate. Functioned on 1st plate.
7	1	Pinhole through 2nd plate. Functioned on 1st plate.
8	1	Pinhole through 2nd plate. Functioned on 1st plate.
9	1	Pinhole through 2nd plate. Functioned on 1st plate.
10	1	Pinhole through 2nd plate. Functioned on 1st plate.

PP - Point protruding.

APPENDIX P

PENETRATION FIRING DATA

Date: 11 March 1950 Time Started: 0915 Time Finished: 0950  
Weapon, Type: BNG 1919A4 (Candaian) Weapon No.: OW 4433 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Range: 800 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .280 Ball

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	Very small bulge on 2nd plate.
2	1	Very small bulge on 2nd plate.
3	1	Very small bulge on 2nd plate.
4	1	Very small bulge on 2nd plate.
5	1	Very small bulge on 2nd plate.
6	1	Very small bulge on 2nd plate.
7	1	Very small bulge on 2nd plate.
8	1	Very small bulge on 2nd plate.
9	1	Very small bulge on 2nd plate.
10	1	Very small bulge on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 14 March 1950      Time Started:      Time Finished:  
Weapon, Type: B.M.C 1919A1 (Canadian)      Weapon No.: OW 4433      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours:  
Density:      Wind:      Weather:      Range: 600 Yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .250, AP

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	1	SB on 2nd plate.
2	1	SB on 2nd plate.
3	1	SB on 2nd plate.
4	1	SB on 2nd plate.
5	1	SB on 2nd plate.
6	1	SB on 2nd plate.
7	1	SB on 2nd plate.
8	1	SB on 2nd plate.
9	1	SB on 2nd plate.
10	1	SB on 2nd plate.

Average 1

APPENDIX P

PENETRATION FIRING DATA

Date: 1<sup>st</sup> March 1950

Time Started:

Time Finished:

Weapon, Type: B.M.G. 1919A4 (Canadian)    Weapon No.: OW 4433    Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 800 Yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	SB on 2nd plate.
2	1	SB on 2nd plate.
3	1	SB on 2nd plate.
4	1	SB on 2nd plate.
5	1	SB on 2nd plate.
6	1	SB on 2nd plate.
7	0	Core lodged in 1st plate. Base flush with face of plate.
8	0	Core lodged in 1st plate. Base flush with face of plate.
9	0	Core lodged in 1st plate. Base flush with face of plate.
10	0	Core lodged in 1st plate. Base flush with face of plate.

Average 0.60

CHART Penetration Test

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1940

Time Started:

Weapon, Type: M.C. 1916A1, 1.10.

Weapon No.: 872252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 40°F

Density: 1.065

Wind: .21 mph

Weather: Clear

Range: 1000 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, Ball, T-1C

SHOT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	Small mark on face on 2nd plate.
2	0	Fairly large hole in plate. Jacket partially stripped.
3	0	Bullets bounced back and lying on ground in front of plate.
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	

Average 0.10

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950 Time Started: Time Finished:  
Weapon, Type: BMG 1919A4, U.S. Weapon No.: 839252 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Range: 1000 yd  
Target Type: 10 Gauge Mild Steel Plate  
Test Ammunition: Cartridge, Caliber .50, AP, T-93.

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	Slight mark on face of 2nd plate.
2	0	Core lodged in 1st plate. Point protruding 1/16".
3	0	Core lodged in 1st plate. Point protruding 1/16".
4	0	Large hole in 1st plate. Core partially stripped.
5	0	Bullet bounced back and on ground in front of target.
6	0	
7	0	
8	0	
9	0	
10	0	

Average .010

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1960

Time Started:

Time Finished:

Weapon, Type: BMG 1919A1, U.S.

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .70, API, T-101

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
2	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
3	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
4	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
5	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
6	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
7	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
8	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
9	1	Functioned on 1st plate. Slight indent mark on 2nd plate.
10	1	Functioned on 1st plate. Slight indent mark on 2nd plate.

Average 1.00

APPENDIX P

PENETRATION FIRING

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: BMG 1919AL, Canadian

Weapon No.: O1 4133

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Leathers:

Range: 1,000 yds

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .250, Ball

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	0	LB on 1st plate with some cracking on rear of plate.
2	0	LB on 1st plate with some cracking on rear of plate.
3	0	LB on 1st plate with some cracking on rear of plate.
4	0	LB on 1st plate with some cracking on rear of plate.
5	0	LB on 1st plate with some cracking on rear of plate.
6	0	LB on 1st plate with some cracking on rear of plate.
7	0	LB on 1st plate with some cracking on rear of plate.
8	0	LB on 1st plate with some cracking on rear of plate.
9	0	LB on 1st plate with some cracking on rear of plate.
10	0	LB on 1st plate with some cracking on rear of plate.

Averages: 0

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: RIG 1519A1, Canadian

Weapon No.: Q7 M33

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 yd

Target Type: 10 Gauge Mild Steel plate

Test Ammunition: Cartridge, Caliber .260, AP.

HIT NO.	NO. OF PLATES PENETRATED	REMARKS
1	0	
2	0	
3	0	
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	Hole in 1st plate but jacket only partially stripping from core. Bullets on ground in front of target. No. marks on 2nd plate.

Average: 0



APPENDIX P

PENETRATION TEST

Date: 15 March 1950

Time Started:

Time Finished:

Weapon, Type: B.M.G., 1919A4, Canadian      Weapon No.: CW 4433      Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100' yd

Target Type: 10 Gauge Mild Steel plate

Test Ammunition: Cartridge, Caliber .280, API.

HIT NO.	NO. OF PLATES PENETRATED	REMARKS	REMARKS																			
1	O	All rounds functioned on first try. Small hole through last plate. Core remained intact did not penetrate in plates.																				
2	O																					
3	O																					
4	O																					
5	C																					
6	O																					
7	O																					
8	O																					
9	C																					
10	O																					
Average: C																						

APPENDIX P

PENETRATION FIRING DATA

Date: 15 March 1950

Time Started:

[REDACTED] Finished:

Weapon, Type: BMO 1919A4, U.S.

Weapon No.: 699252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 yd

Target Type: 10 Gauge Mild Steel Plate

Test Ammunition: Cartridge, Caliber .30, API, T-101.

<u>HIT NO.</u>	<u>NO. OF PLATES PENETRATED</u>	<u>REMARKS</u>
1	0	Core landed in 1st plate. bullet protruding 1/16". functioned on 1st plate.
2	0	All points penetrated but bullets bounced back to ground in front of target
3	0	
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	

Average 0

Note: Only API, Caliber .30 fired at this range.

APPENDIX P

PENETRATION FIRING DATA

Date: 16 March 1950

Time Started: 1000 [REDACTED] Time Finished: 1400

Weapon, Type: T-25

Weapon No.: 1C Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 50°

Density: 1.07

Wind: 0° 20 mph

Weather: Clear

Range: 600 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Cartridges, Ball, M-104

TEST NO.	TEST CONDITIONS			TEST RESULTS
	Frontal	Side	Top	
1	No	Yes	Yes	Frontal - 100%. Front side - 100%.
2	Yes	Yes	Yes	Front - 100%. Front side - 100%.
3	Yes	Yes	Yes	Front - 100%. Front side - 100%.
4	Yes	Yes	Yes	Front - 100%. Front side - 100%.
5	Yes	Yes	Yes	Front and side.
6	Yes	Yes	Yes	Front and side.
7	Yes	Yes	Yes	Front and side.
8	Yes	Yes	Yes	Front and side.
9	Yes	Yes	Yes	Front and side.
10	Yes	Yes	Yes	Front and side.

Note: 100% indicates penetration.

APPENDIX P

PENETRATION FIRING TEST

Date: 14 March 1950

Time Started: 1450

Time Finished: 1525

Weapon, Type: T-25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Ranges: 100 Yards

Target Type: Helmets and Body armor

Test Ammunition: Cartridge, Caliber .30, M1, T-101

WIT NO.	TEST INFORMATION		RESULT	BODY ARMOR
	SHOOT	ARMOR		
1	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
2	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
3	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
4	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
5	Yes	Yes	Front and rear. Functioned on front.	Front and side. Functioned in armor. Set fire to rear of armor.
6	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
7	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
8	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
9	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.
10	Yes	Yes	Front and rear. Functioned on front.	Front only. Functioned in armor.

APPENDIX P

PENALTY FIRING DATA

Date: 14 March 1950

Time Started:

Finished: 1335

Weapon, Type: M2

Weapon No.: 3

Previous Rounds: 237

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather: Clear Range: 600 Yards

Target Type: Helmets and body armor

Test Ammunition: Artillery, High Velocity, Full

Round	Distance	Angle	Result
1	163	163	Front and Body
2	163	163	Front and Body
3	163	163	Front and Body
4	163	163	Front and Body
5	163	163	Front and Body
6	163	163	Front and Body
7	163	163	Front and Body
8	163	163	Front and Body
9	163	163	Front and Body
10	163	163	Front and Body

Note: None missed at this range.

## APPENDIX P

PENETRATION PIPELINE DATA

Date: 16 March 1950 Time Started: 1405 Time Finished: 1445

Weapon, Type: E1'2 [REDACTED] Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Clear Range: 400 Yards

Target Type: Plastic and Metal Armor

Test Ammunition: Cartridge, Caliber .50, API

TEST NO.	PENETRATION		TIME OF	TEST AREA
	FRONT	REAR		
1	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
3	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
4	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
5	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
6	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
7	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
8	Yes	Yes	Front and Rear. Functioned on front.	Front only. Functioned in armor.
9	Yes	No	Front only. Functioned on front.	Front only. Functioned in armor.
10	Yes	No	Front only. Functioned on front.	Front only. Functioned in armor.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Weapon, Type: M1919A4 (US)

Weapon No.

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 44°

Density: 1.029

Wind: 23 mph

Weather: Misty

Range: 500 yards

Target Type: Helmets and Body Armor

Test Ammunition: Cartridge, C-liber .30, Full, T-104

TEST NO.	INSTRUMENTATION		BODY ARMOR	RESULT
	FRONT PLATE	REAR PLATE		
1	Yes	Yes	Some plate shattering.	Pass
2	Yes	Yes	Some plate shattering.	Pass
3	Yes	No	Some plate shattering.	Pass
4		Yes	Some plate shattering.	Pass
5		Yes	Some plate shattering.	Pass
6		Yes	Some plate shattering.	Pass
7		Yes	Some plate shattering.	Pass
8		Yes	Some plate shattering.	Pass
9		Yes	Some plate shattering.	Pass
10				

Note: In as much as full penetration was not obtained before the 1000th shot, the results should be considered as preliminary.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: BMG 1919A4 (U.S.)

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 500 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Cartridge, Caliber .30 AF, T-93

HIT NO.-	PENETRATION			HELMET
	HITTING	FRAG AFFECT	BODY ARMOR	
1	Yes	Yes	Plate shattering plate.	Front and Back.
2	Yes	Yes	Plate shattered.	Front and Back.
3		Yes	"	Front and Back.
4		Yes	"	Front and Back.
5	Yes	Plate shattered.	"	
6	Yes	Plate shattered.	"	
7	Yes	Plate shattered.	"	
8	Yes	Plate shattered.	"	
9	Yes	Plate shattered.	"	
10	Yes	Cleaning plate.	"	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: [REDACTED] Finished:

Weapon, Type: E.C. 1919A4 (U.S.) Weapon No.: 756252 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 800 Yards

Target Type: Pilots and Pilot Armor

Test Ammunition: Cartridge, Caliber .30, ANI, T-101

WIT NO.	PENETRATION		COPY OF CR	HELMET
	WITNESS	TEST NUMBER		
1	Yes	Yes	Clean hole in plate	Front and Back.
2	Yes	Yes	Clean hole in plate	Front and Back.
3	Yes	Yes	Clean hole in plate	Front and Back.
4	Yes	Yes	Clean hole in plate	Front and Back.
5	Yes	Yes	Clean hole in plate	Front and Back.
6	Yes	Yes	Clean hole in plate	Front and Back.
7	Yes	Yes	Plate shattering	Front and Back.
8	Yes	Yes	Plate shattering	Front and Back.
9	Yes	Yes	Plate shattering	Front and Back.
10		Yes	Plate shattering	Front and Back.

C  
APPENDIX P

Penetration Firing Data

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: M1 1918A4 (Canadian) Weapon No.: CW 4433 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 500 Yards

Target Type: Vests and Body Armor

Test Ammunition: Cartridge, Caliber .30C, Ball

HTT NO.	PENETRATION			HEAVY
	FRONT	REAR	PLATE	
1	Yes	No	Lodged in plate.	Front and Back.
2	Yes	No	Lodged in plate	Front and Back.
3	Yes	No	" " in hole in plate	Front and Back.
4		Yes	Clean hole in plate	
5		Yes	" " in hole in plate	
6		Yes	Clean hole in plate	
7		Yes	Clean hole in plate	
8		Yes	Clean hole in plate	
9		No	It is shattered.	
10		Yes	Lodged in rear nylon. Front corner cut of plate.	

APPENDIX P

PENETRATION FIRING DATA

Date: 20 March 1950

Time Started:

Time Finished:

Weapon, Type: M1 105mm (Carriage) Weapon No.: OW 4493 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Winds:

Weather:

Ranges: 500 Yards

Target Type: Wall plate - 1/2 inch armor

Test Ammunition: Cartouche, Caliber .500, AT

TEST NO.	PREPARATION			TEST STATE	RESULT
	READY	LOAD	SHOOT		
1	Yes	Yes		Clean hole in plate	Front only.
2	Yes	Yes		Clean hole in plate	Front only.
3	Yes	Yes		Clean hole in plate	Front and Back.
4				Clean hole in plate	
5				Clean hole - Core lodged in rear platen.	
6				Thru platen - Core lodged in rear platen.	
7				Clean hole in plate.	
8				Clean hole in plate.	
9				Clean hole in plate.	
10				Clean hole in plate.	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: M1918A4 (Canadian)      Weapon No.: OW 4433      Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 500 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Cartridge, Caliber .30 API.

TEST NO.	PENETRATION		BODY ARMOR	INJURY
	Front	Rear		
1	Yes	Yes	Ricochet off thru plate.	Front only.
2	Yes	Yes	Front - out large piece of bottom plate.	Front only.
3	Yes	No	Core lodged in armor. 1/2 hardly thru rear section.	
4		Yes	Core held in armor.	
5		No	Lodged in rear nylon.	
6	No		Lodged in rear nylon.	
7	No		Thru plate - lodged in rear nylon.	
8		No	Thru plate - lodged in rear nylon.	
9		Yes	Complete	
10		No	Thru plate - lodged in rear nylon.	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: M1919A4 (U.S.)

Weapon No.: [REDACTED] Pounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 44°F

Density: 1.028

Wind: W 23 mph

Weather: Misty

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg, Cal. .30, Ball, T-104

HIT NO.	PENETRATION		HELMETS	BODY ARMOR	REMARKS	BODY ARMOR
	HELMETS	BODY ARMOR				
1	Yes	Yes			Small hole in plate; front and back	
2	Yes	Yes	"	"	" " only.	" "
3		Yes	"	"	" "	" "
4		Yes	"	"	" "	" "
5		Yes	"	"	" "	" "
6		Yes	"	"	" "	" "
7	No				Plate bent.	
8	No		"	"		
9	No		"	"		
10	No		"	"		

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950 Time Started: [REDACTED]

Weapon, Type: M1919A4 (U.S.) Weapon No.: 839252 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg, Cal. .30, AP, T-93

HIT NO.	PENETRATION		REMARKS
	HELMET	BODY ARMOR	
1	Yes		Small hole in plate.
2	No	" "	" "
3	Yes	" "	" "
4	Yes	" "	" "
5	Yes	" "	" "
6	Yes	" "	" "
7	No		Plate bent.
8	No	" "	
9	No	" "	
10	No	" "	

NOTE: In an effort to conserve test ammunition and inasmuch as Ball ammunition penetrated the helmets at this range, no attempt was made to continue firing until helmet hits were obtained.

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Finished:

Weapon, Type: EME 1919A4 (U.S.)

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg, Cal. .30, API, T-101

HIT NO.	PENETRATION		HELMETS	REMARKS	BODY ARMOR
	HELMETS	BODY ARMOR			
1	Yes	Yes		Clean hole in plate; front and back	
2	Yes	Yes	" " " "	" " "	
3	Yes	Yes	" " " "	" " "	
4	Yes	Yes	" " " "	" " "	
5	Yes	Yes	" " " "	" only	
6	Yes	Yes	" " " "	" "	
7	Yes	Yes	" " " "	" "	
8	No		Plates bent.		
9	No		" "		
10	No		" "		

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: BMG 1919A4 (Canadian)

Weapon

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg, Cal. .280, Ball

HIT NO.	PENETRATION		REMARKS	BODY ARMOR
	HELMETS	BODY ARMOR		
1	Yes	Yes	Plate shattered a small amount; front only.	
2	Yes	Yes	Plate shattered a small amount; front and back.	
3	Yes	Yes	Plate shattered a small amount.	
4	No		Plate shattered a small amount.	
5	No		Plate broken.	
6	No		Plate bent.	
7	Yes		Plate bent.	
8	Yes		Some plate shattering.	
9	Yes		Some plate shattering.	
10			Some plate shattering.	

APPENDIX P

PENETRATION FIRING DATA

Date: 23 March 1950

Time Started:

Weapon, Type: B.M.C. 1919A4 (Canadian) Weapon No.: CW 4433 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg. Cal. .280, AP

PENETRATION

HIT NO.	HELMET	BODY ARMOR	BODY ARMOR	REMARKS	HELMET
1	Yes	Yes	"	Some shattering at plate; front only.	"
2	Yes	Yes	"	" "	" "
3	Yes	Yes	"	" "	" "
4	Yes	Yes	"	" "	" "
5	No		Plate bent.		
6	No		" "		
7	No		" "		
8	No		" "		
9	No				
10	Yes				

APPENDIX P

SEVENTH TEST FIRING DATA

Date: 23 March 1950

Time Started:

Time Finished:

Weapon, Type: EMG 1919A4 (Canadian)      Weapon No. [REDACTED] Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1,000 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Ctg. Cal. .280, API

HIT NO.	PENETRATION		BODY ARMOR	REMARKS	HELMET
	HELMETS	BODY ARMOR			
1	Yes	No	Plate broken; front only.		
2	Yes	No	Plate bent; front only.		
3		No	" "		
4		No	" "		
5		No	" "		
6		No	" "		
7		No	" "		
8		No	" "		
9		No	" "		
10		No	" "		

APPENDIX P

PENETRATION FIRING DATA

Date: 27 March 1950

Time Started:

shed:

Weapon, Type: M1919A4 (U.S.)

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 46° F

Density: 1.032

Wind: SE 4 mph

Weather: Clear

Range: 1200 Yards

Target Type: M1948 and Body Armor

Test Ammunition: Cartridge, Caliber .30, Ball, T-104

HIT NO.	PENETRATION			WOUND
	PERFET	KEY NUMBER	TYPE AND CR	
1	Yes	No	Plate Cracked	Front only.
2	Yes	No	Plate Cracked	Front and Back
3	Yes	No	Plate Cracked	Front and Back
4		No	Plate Cracked	
5		No	Large bulge	
6		No	Large bulge	
7		No	Plate cracked	
8		No	Plate cracked	
9		No	Plate cracked	
10		No	Plate cracked	

APPENDIX P

PENETRATION FIRING DATA - LISTING

Date: 27 March 1950

Time Started:

Time Finished:

Weapon, Type: M-1 1010-A (U.S.)

Weapon No.:

- Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 Yards

Target Type: Helmets and Body Armor

Test Ammunition: Surplus, M1 Garand .30 Cal, T-23

TEST NO.	EFFECT TEST	TEST NUMBER	EFFECT NUMBER	HELMET
1	No Effect	1c	Plate cracked	Front only.
2	Yes	1b	Plate cracked	Front only.
3	Yes	1c	SP	Front only.
4	Yes	1c	Plate cracked	Front only.
5	Yes	1c	Plate cracked	Front only.
6	Yes	1c	SP	Front only.
7	Yes	1c	SP	Front only.
8	Yes	1c	Plate cracked Plate cracked	Front only.

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 201 Feb 1950      Time Started: [REDACTED]      Date Finished: [REDACTED]  
Weapon, Type: 3.5" ATGM (U.S.)      Weapon No.: [REDACTED]      Previous Rounds: [REDACTED]  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Range: 1000 Yards  
Target Type: Vehicle - Body or Chassis  
Test Ammunition: High Velocity, Solid or HE, API, T-kill

TEST NO.	TEST	TYPE	RESULT	NOTE
1	1	HE	Lodged in rear cylinder. Front plate intact.	Front and Back
2	2	HE	Front plate	Front and Back
3	3	HE	Core lodged in plate.	Front only
4	4	HE	Front intact	
5	5	HE	Front intact	
6	6	HE	Front intact	
7	7	HE	Front intact	
8	8	HE	Front intact	
9	9	HE	Front intact	
10	10	HE	Front intact	
11	11	HE	Front intact	
12	12	HE	Front intact	
13	13	HE	Front intact	
14	14	HE	Front intact	
15	15	HE	Front intact	
16	16	HE	Front intact	
17	17	HE	Front intact	
18	18	HE	Front intact	
19	19	HE	Front intact	
20	20	HE	Front intact	
21	21	HE	Front intact	
22	22	HE	Front intact	
23	23	HE	Front intact	
24	24	HE	Front intact	
25	25	HE	Front intact	
26	26	HE	Front intact	
27	27	HE	Front intact	
28	28	HE	Front intact	
29	29	HE	Front intact	
30	30	HE	Front intact	
31	31	HE	Front intact	
32	32	HE	Front intact	
33	33	HE	Front intact	
34	34	HE	Front intact	
35	35	HE	Front intact	
36	36	HE	Front intact	
37	37	HE	Front intact	
38	38	HE	Front intact	
39	39	HE	Front intact	
40	40	HE	Front intact	
41	41	HE	Front intact	
42	42	HE	Front intact	
43	43	HE	Front intact	
44	44	HE	Front intact	
45	45	HE	Front intact	
46	46	HE	Front intact	
47	47	HE	Front intact	
48	48	HE	Front intact	
49	49	HE	Front intact	
50	50	HE	Front intact	
51	51	HE	Front intact	
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61	61	HE	Front intact	
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64	64	HE	Front intact	
65	65	HE	Front intact	
66	66	HE	Front intact	
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68	68	HE	Front intact	
69	69	HE	Front intact	
70	70	HE	Front intact	
71	71	HE	Front intact	
72	72	HE	Front intact	
73	73	HE	Front intact	
74	74	HE	Front intact	
75	75	HE	Front intact	
76	76	HE	Front intact	
77	77	HE	Front intact	
78	78	HE	Front intact	
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80	80	HE	Front intact	
81	81	HE	Front intact	
82	82	HE	Front intact	
83	83	HE	Front intact	
84	84	HE	Front intact	
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86	86	HE	Front intact	
87	87	HE	Front intact	
88	88	HE	Front intact	
89	89	HE	Front intact	
90	90	HE	Front intact	
91	91	HE	Front intact	
92	92	HE	Front intact	
93	93	HE	Front intact	
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96	96	HE	Front intact	
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114	114	HE	Front intact	
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117	117	HE	Front intact	
118	118	HE	Front intact	
119	119	HE	Front intact	
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121	121	HE	Front intact	
122	122	HE	Front intact	
123	123	HE	Front intact	
124	124	HE	Front intact	
125	125	HE	Front intact	
126	126	HE	Front intact	
127	127	HE	Front intact	
128	128	HE	Front intact	
129	129	HE	Front intact	
130	130	HE	Front intact	
131	131	HE	Front intact	
132	132	HE	Front intact	
133	133	HE	Front intact	
134	134	HE	Front intact	
135	135	HE	Front intact	
136	136	HE	Front intact	
137	137	HE	Front intact	
138	138	HE	Front intact	
139	139	HE	Front intact	
140	140	HE	Front intact	
141	141	HE	Front intact	
142	142	HE	Front intact	
143	143	HE	Front intact	
144	144	HE	Front intact	
145	145	HE	Front intact	
146	146	HE	Front intact	
147	147	HE	Front intact	
148	148	HE	Front intact	
149	149	HE	Front intact	
150	150	HE	Front intact	
151	151	HE	Front intact	
152	152	HE	Front intact	
153	153	HE	Front intact	
154	154	HE	Front intact	
155	155	HE	Front intact	
156	156	HE	Front intact	
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158	158	HE	Front intact	
159	159	HE	Front intact	
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162	162	HE	Front intact	
163	163	HE	Front intact	
164	164	HE	Front intact	
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166	166	HE	Front intact	
167	167	HE	Front intact	
168	168	HE	Front intact	
169	169	HE	Front intact	
170	170	HE	Front intact	
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173	173	HE	Front intact	
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175	175	HE	Front intact	
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177	177	HE	Front intact	
178	178	HE	Front intact	
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200	200	HE	Front intact	
201	201	HE	Front intact	
202	202	HE	Front intact	
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206	206	HE	Front intact	
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212	212	HE	Front intact	
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221	221	HE	Front intact	
222	222	HE	Front intact	
223	223	HE	Front intact	
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225	225	HE	Front intact	
226	226	HE	Front intact	
227	227	HE	Front intact	
228	228	HE	Front intact	
229	229	HE	Front intact	
230	230	HE	Front intact	
231	231	HE	Front intact	
232	232	HE	Front intact	
233	233	HE	Front intact	
234	234	HE	Front intact	
235	235	HE	Front intact	
236	236	HE	Front intact	
237	237	HE	Front intact	
238	238	HE	Front intact	
239	239	HE	Front intact	
240	240	HE	Front intact	
241	241	HE	Front intact	
242	242	HE	Front intact	
243	243	HE	Front intact	
244	244	HE	Front intact	
245	245	HE	Front intact	
246	246	HE	Front intact	
247	247	HE	Front intact	
248	248	HE	Front intact	
249	249	HE	Front intact	
250	250	HE	Front intact	
251	251	HE	Front intact	
252	252	HE	Front intact	
253	253	HE	Front intact	
254	254	HE	Front intact	
255	255	HE	Front intact	
256	256	HE	Front intact	
257	257	HE	Front intact	
258	258	HE	Front intact	
259	259	HE	Front intact	
260	260	HE	Front intact	
261	261	HE	Front intact	
262	262	HE	Front intact	
263	263	HE	Front intact	
264	264	HE	Front intact	
265	265	HE	Front intact	
266	266	HE	Front intact	
267	267	HE	Front intact	
268	268	HE	Front intact	
269	269	HE	Front intact	
270	270	HE	Front intact	
271	271	HE	Front intact	
272	272	HE	Front intact	
273	273	HE	Front intact	
274	274	HE	Front intact	
275	275	HE	Front intact	
276	276	HE	Front intact	
277	277	HE	Front intact	
278	278	HE	Front intact	
279	279	HE	Front intact	
280	280	HE	Front intact	
281	281	HE	Front intact	
282	282	HE	Front intact	
283	283	HE</td		

APPENDIX P

PENETRATION FIRING DATA

Date: 27 March 1950

Time Started:

Time Finished:

Weapon, Type: M-1 105mm (Canadian)      Weapon No.: 4463

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Target Type:

Steel plate armor

Range: 1000 Yards

Test Ammunition: Corroded, Caliber .200, Ball

TEST NO.	TEST 1		TEST 2		HOLE SP.
	1	2	1	2	
1	Yes	No	Core lodged in plate.		Front only.
2	Yes	No	Plate penetrated		Front only.
3	Yes	No	Plate penetrated		Front only.
4	Yes	No	Plate bent		Front only.
5	Yes	No	Core lodging in plate.		Front only.
6		No	Plate broken		Front only.
7		No	Plate bent		Front only.
8		No	Small clean hole		Front only.
9		No	Core lodged in plate.		Front only.
10		Yes	Small clean hole.		

APPENDIX P

PENETRATION FIRING DATA

Date: 27 March 1950

Time Started:

Weapon, Type: D.G. 1710A4 (Canadian)      Weapon No. 171433      Previous Rounds:

Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1200 Yards

Target Type: Helmets and Body armor

Test Ammunition: Cartridges, Caliber .270, AP

HIT NO.	PENETRATION		BODY ARMOR	HELMET
	HIT	MISS		
1	Yes	No	No Bulge	Front only.
2	Yes	No	No Bulge	
3		No	Plate cracked	
4		No	Plate cracked	
5		No	Plate cracked	
6		No	Plate cracked	
7		No	Plate cracked	
8		No	Plate cracked	
9		No	Plate cracked	
10		No	Plate cracked	

APPENDIX P

FLINTMEN FIRING DATA

Date: 27 March 1950

Time Started:

Time Finished:

Weapon, Type: B.C. 1910A4 (Canadian)      Weapon No. [REDACTED]      Rounds: [REDACTED]

Ammunition Temperature: Ambient

Barrel Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1000 Yards

Target Type: Mannequin and target marker

Test Ammunition: Cartridge, Caliber .300 AMT

HIT NO.	INDICATION		TIME OF HIT	REPORT
	NO	YES		
1	No	No	Impact Indigo - 315-224 correct	SI on plate.
2	No	No		SI on plate.
3	No	No		SI on plate.
4	No	No		SI on plate.
5	No	No		SI on plate.
6	No	No		SI on plate.
7	No	No		SI on plate.
8	No	No		SI on plate.
9	No	No		SI on plate.
10	No	No		SI on plate.

APPENDIX P

PENETRATION FIRING DATA

Date: 13 April 1950 Time Started: 0930 Time Finished: 1010  
Weapon, Type: BNG 1910A4 (US) Weapon [REDACTED] Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 41°F  
Density: 1.053 Wind: PW 23 mph Weather: Broken clouds Range: 1400 Yards  
Target Type: Helmets  
Test Ammunition: Cartridge, Caliber .30, Ball, T-104

WT NO.	TESTED	TEST
1	No	Safflower Oil at 1/2"
2	No	Helmet crushed 3/8"
3	No	Helmet crushed
4	No	Padding Bulge
5	No	Helmet crushed
6	No	Safflower Oil
7	No	Helmet crushed
8	No	Safflower Oil
9	No	Walnut crushed 1/2"
10	No	Helmet crushed 1/4"
		Pad - Safflower Oil
		Pad - Safflower Oil

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 12 April 1950 Time Started: Time Finished:  
Weapon, Type: F-9 101744 (U.S.) Weapon [REDACTED] Previous Rounds:  
Ammunition Temperature: Ambient Darry Temperature at 1200 Hours:  
Density: Wind: Weather: Range: 1400 yards  
Target Type: Helmet  
Test Ammunition: Cartridge, Ballistic .30, M1, T-93

TEST NO.	POWER TEST	RESULTS
1	No	Helmet cracked
2	No	IE
3	No	Helmet cracked
4	Yes	Small hole. Fire only.
5	No	Helmet cracked
6	Yes	Small hole with crack. Impact only.
7	No	IE
8	No	Small hole. Impact only.
9	Yes	Small hole. Impact only.
10	No	Helmet cr. over.

APPENDIX P

PENETRATION FIRING DATA

Date: 12 April 1950 Time Started: [REDACTED] Time Finished: [REDACTED]  
Weapon, Type: M.G. 1916A4 (U.S.) Weapon No. [REDACTED] Rounds: [REDACTED]  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Clear Range: 1400 Yards  
Target Type: [REDACTED]  
Test Ammunition: Cartridge, Ballistic .30, M1, G-101.

TEST NO.	TEST PREDICTION	TEST ACTUAL
1	No	Front & side.
2	Yes	Front only.
3	Yes	Front only.
4	Yes	Front only.
5	Yes	Front only.
6	Yes	Front only.
7	Yes	Front only.
8	Yes	Front only.
9	Yes	Front only.
10	Yes	Front only.

**APPENDIX P**

**PENETRATION FIRING DATA**

Date: 10 April 1950 Time Started: 1110 Time Finished: 1135  
Weapon, Type: M16 1010A4 (Canadian) Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather: Clear Range: 1400 Yards  
Target Type: Helmets  
Test Ammunition: Cartridge, Bullet .200, Ball

TEST NO.	POSITION TEST	RESULT
1	No	Small - star hole with star cracks.
2	No	Small - star hole with star cracks.
3	No	Small - star hole with star cracks.
4	No	Medium bullet
5	No	Large bullet
6	No	Medium bullet
7	No	Medium bullet
8	No	Medium bullet
9	No	Medium bullet
10	No	Medium bullet
11	No	Medium bullet

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APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: [REDACTED] Finished: 1105

Weapon, Type: F-3 M114 (Canadian) Weapon No.: 37 4433 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Range: 1400 Yards

Target Type: Plaster

Test Ammunition: Cartridge, Ballistic .30 Cal.

TEST NO.	PROTECTED	NOTES
1	No	Large crack with bulge.
2	No	Large crack with bulge.
3	No	Medium bulge
4	No	Medium bulge
5	No	Medium bulge
6	No	Large or sh. with bulge.
7	No	Large crack with bulge.
8	No	Medium bulge
9	No	
10	No	SP

APPENDIX P

PENETRATION FIRING DATA

Date: 13 April 1950 Time Started: 1000 Time Finished: 1035

Weapon, Type: M6 1010A4 (Canadian) Weapon No.: [REDACTED] Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient [REDACTED] Average temperature at 1200 Hours:

Density: Wind: Weather: Range: 1400 Yards

Target Type: Metalic

Test Ammunition: Carriger, 1010A4, 101

HIT NO.	TIME	RESULT	REMARKS
1	No	Small crack in diaphragm.	Functioned.
2	No	Large bulge	Functioned.
3	No	Small crack in diaphragm.	No Functioning.
4	No	Small crack in diaphragm.	Functioned.
5	No	Large bulge	No Functioning.
6	100	Small bulge	Functioned.
7	No	Small bulge	Functioned.
8	No	Large bulge	Functioned.
9	No	Small bulge	Functioned.
10	No	Small bulge	Functioned.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started:

Weapon, Type: B-19 101PAH, U.S.

Weapon No.: 859252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 50°F

Density: 1.007

Wind: N., 7 mph

Weather: Rain

Range: 1600 yd

Target Type: Helmets

Test Ammunition: Cartridge, Caliber .30, Ball, T-101

HIT NO.	HIT STATUS		REMARKS
	HIT	MISS	
1	No		Large Crack.
2	No		Skidded off. Medium bulge. Fair hit.
3	No		Skidded off. Medium bulge. Fair hit.
4	No		Skidded off. Medium bulge. Fair hit.
5	No		Skidded off. Medium bulge. Fair hit.
6	No		Skidded off. Medium bulge. Fair hit.
7	No		Skidded off. Medium bulge. Fair hit.
8	No		Skidded off. Medium bulge. Fair hit.
9	No		Skidded off. Medium bulge. Fair hit.
10	No		Skidded off. Medium bulge. Fair hit.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started:

Time Finished:

Weapon, Type: M1, 1000AL, U.S.

Weapon No.: 832252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather: Rain

Range: 1600 yd

Target Type: Metal

Test Ammunition: Cartridge, Caliber .30, AP, T-93.

HIT NO.	UNPENETRATED WEIGHT	REMARKS		
		1	2	3
1	No	Skidded off.	Medium bulge.	Fair hit.
2	No	Skidded off.	Medium bulge.	Fair hit.
3	No	Skidded off.	Medium bulge.	Fair hit.
4	No	Skidded off.	Medium bulge.	Fair hit.
5	No	Skidded off.	Medium bulge.	Fair hit.
6	No	Skidded off.	Medium bulge.	Fair hit.
7	No	Skidded off.	Medium bulge.	Fair hit.
8	No	Skidded off.	Medium bulge.	Fair hit.
9	No	Skidded off.	Medium bulge.	Fair hit.
10	No	Skidded off.	Medium bulge.	Fair hit.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started: [REDACTED]

Weapon, Type: RPG 106mm, U.S.

Weapon No.: 839252

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 1400 yd

Target Type: Helmets

Test Ammunition: Cartridge, Caliber .30, API, T-101

HIT NO.	PISTON PENETRATED	REMARKS
1	Yes	Front only.
2	Yes	Front only.
3	No	SB
4	No	SB
5	No	SB
6	Yes	Front only.
7	Yes	
8	No	Crack 1/16" long on front
9	"c"	Crack 1/16" long on front
10	No	

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APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started:

Time Finished:

Weapon, Type: M19 1919A1, Canadian

Weapon No.:

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Overcast

Range: 1600 yd

Target Type: Pellets

Test Ammunition: Cartridge, Caliber .200, Ball

PIT NO.	PENETRATED HOLE	REMARKS	
		NO.	REMARKS
1	No		Skidded off. SS. Fair Hit.
2	No		Skidded off.
3	No		Skidded off.
4	No		Skidded off.
5	No		Skidded off.
6	No		Skidded off.
7	No		Skidded off.
8	No		Top center hit. Medium bulge.
9	No		Top center hit. Medium bulge.
10	No		Top center hit. Medium bulge.

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started:

Time Finished:

Weapon, Type: BNC 1919A4,

Weapon No.: [REDACTED] Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 1600 yd

Target Type: Helmets

Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	PEENETRATED HELMET	REMARKS
1	No	Perfect center hit. SB only.
2	No	Small crack.
3	No	Small crack.
4	No	Small crack.
5	No	Small crack.
6	No	Small crack.
7	No	Small crack.
8	No	Perfect center hit. SE only.
9	Yes	
10	No	SB

APPENDIX P

PENETRATION FIRING DATA

Date: 29 March 1950

Time Started:

[REDACTED] Finished:

Weapon, Type: SMG 1919A1, Canadian

Weapon No.: [REDACTED]

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 1600 yd

Target Type: Helmets.

Test Ammunition: Cartridge, Caliber .280, API.

HIT NO.	PENETRATED HELMET	REMARKS
1	No	Medium bulge on front.
2	No	Medium bulge on front.
3	No	Medium bulge on front.
4	No	Medium bulge on front.
5	No	Medium bulge on front.
6	No	Medium bulge on front. Perfect front center.
7	No	Medium bulge on front. No function.
8	No	Medium bulge on front.
9	No	SB on front.
10	No	SB on front.

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950 Time Started: [REDACTED] Time Finished: [REDACTED]

Weapon, Type: T25 Weapon No. [REDACTED] Previous Rounds: [REDACTED]

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours: 47°F

Density: 1.040 Wind: NW, 16 mph Weather: Cloudy Range: 25 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, Ball, T104

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	3"	To base of core.
2	5-1/2"	Hit mortar on back row of bricks.
3	4-3/4"	To base of core.
4	4-1/2"	To base of core.
5	4-1/4"	To base of core.
Average:		4.40".
5 rounds required for complete penetration.		

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950 Time Started: [REDACTED] Finished: [REDACTED]  
Weapon, Type: M5 Weapon No. [REDACTED] Previous Rounds: [REDACTED]  
Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:  
Density: Wind: Weather:  
Target Type: Brick Wall, 3-1/2" Thick Range: 25 Yd  
Test Ammunition: Cartridge, Caliber .50, AP, T95

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	4-3/4"	To base of core.
2	4-1/2"	To base of core.
3	4-1/2"	To base of core.
4	4-1/2"	To base of core.
5	5-1/4"	To base of core.

7 rounds required for complete penetration.  
Average: 4.65".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 25 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, API, T93

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	5"	To base of core. Functioned.
2	4-1/4"	To base of core. Functioned.
3	4-3/4"	To base of core. Functioned.
4	6-1/2"	To base of core. Functioned.
5	4-1/4"	To base of core.

6 rounds required for complete penetration.

Average: 4.90".

336

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Weapon, Type: EME

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather:

Range: 25 Yd

Target Type: Brick wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .230, Ball

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	4-5/8"	Near mortar line.
2	2-5/4"	Near mortar line.
3	3"	Near mortar line.
4	2-5/8"	Near mortar line.
5	3"	Center of brick.

Average: 3.40".

8 rounds required for complete penetration.

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950 Time Started: Time Finished:  
Weapon, Type: E-2 Previous Rounds:  
Ammunition Temperature: Ambient Barley Temperature at 1200 Hours: 47°F  
Density: 1.040 Wind: NW, 16 mph Weather: Cloudy Range: 25 Yd  
Target Type: Brick Wall, 8-1/2" Thick  
Test Ammunition: Cartridge, Caliber .260, AP

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-7/8"	Top edge of brick.
2	3-1/4"	Top edge of brick.
3	3-1/8"	Top edge of brick.
4	2-1/2"	Bottom edge of brick.
5	5"	Bottom edge of brick.

..... 9 rounds required for complete penetration.

Average: 2.95".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Time Finished:

Weapon Type: M 2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather:

Range: 25 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-3/4"	Center of brick. Functioned.
2	2-7/8"	Center of brick. Functioned.
3	2-1/2"	Center of brick. Functioned.
4	3-1/2"	Center of brick. Functioned.
5	2-5/4"	Center of brick. Functioned.

Average: 2.875".

1½ rounds required for complete penetration.

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 41°F

Density: 1.061

Wind: NW, 23 mph.

Weather: Broken clouds

Range: 100 Yd

Target Type: Brick Wall, 3-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, Ball, T104

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	3"	To base of core.
2	3-1/4"	To base of core.
3	4-3/4"	To base of core.
4	4-3/4"	To base of core.
5	4-3/4"	To base of core.

10 rounds required for complete penetration.

Average: 4.10".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick wall, 8-1/2" thick

Test Ammunition: Cartridge, Caliber .50, AP, T93

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	4-1/4"	To base of core.
2	5-1/2"	To base of core.
3	5"	To base of core.
4	4"	To base of core.
5	3-1/4"	To base of core.

11. rounds required for complete penetration.

Average: 3.60".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: M25

Weapon

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, API, T101

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	4-1/4"	To base of core. Functioned.
2	4"	To base of core. Functioned.
3	4-1/4"	To base of core. Functioned.
4	5-1/4"	To base of core. Functioned.
5	4"	To base of core. Functioned.

12 rounds required for complete penetration.

Average: 4.35".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Weapon, Type: EM2

Weapon No. 1 Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	4-1/2"	To base of core.
2	3-1/2"	To base of core.
3	5-1/2"	To base of core.
4	3"	To base of core.
5	4-1/2"	To base of core.

1/4 rounds required for complete penetration.

Average: 4.15".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Time Finished:

Weapon, Type: EM2

Weapon [REDACTED] Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 47°F

Density: 1.040 Wind: NW, 16 mph

Weather: Cloudy

Range: 100 Md

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	3-1/4"	To base of core.
2	5-1/4"	To base of core.
3	3-1/2"	To base of core.
4	5-3/4"	To base of core.
5	4-1/4"	To base of core.

32 rounds required for complete penetration.

Average: 4.00".

APPENDIX P

PENETRATION FIRING DATA

Date: 5 April 1950

Time Started:

Time Finished:

Weapon, Type: EM2

Weapon No.: [REDACTED] Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-1/2"	To base of core. Functioned.
2	3-1/4"	To base of core. Functioned.
3	2-3/4"	To base of core. Functioned.
4	2-1/4"	To base of core. Functioned.
5	3-1/4"	To base of core. Functioned.

34 rounds required for complete penetration.

Average: 2.80".

345

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1970

Time Started:

Time Finished:

Weapon, Type: T-5

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient.

Daily Temperature at 1200 Hours: 41°F

Density: 1.061

Wind: NNE, 25 mph

Weather: Broken Clouds

Range: 300 Yd

Target Type: Brick Wall, 8-1/2" Thick

Test Ammunition: Cartridge, Caliber .30, Ball, T104

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-3/4"	To base of core.
2	3-1/4"	To base of core.
3	2-1/4"	To base of core.
4	2"	To base of core.
5	3-3/4"	To base of core.

Average: 2.80".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 500 Yd

Target Type: Brick Wall, 2-1/2" Thick

Test Ammunition: Cartridge, Caliber .50, M, 193

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-1/2"	To base of core.
2	3-1/4"	To base of core.
3	2-1/2"	To base of core.
4	2-1/2"	To base of core.
5	3"	To base of core.
Average: 2.75".		

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Finished:

Weapon, Type: R25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather:

Range: 300 Yd

Target Type: Brick wall

Test Ammunition: Cartridge, Caliber .50, API, T101

WIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-1/4"	To base of core. Functioned.
2	2-1/2"	To base of core. Functioned.
3	2-1/4"	To base of core. Functioned.
4	2-1/2"	To base of core. Functioned.
5	3"	To base of core. Functioned.

Average: 3.00"

APPENDIX F

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Finished:

Weapon, Type: M12

Weapon

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 300 Yd

Target Type: Brick Wall, 3-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, Ball

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	2-1/4"	To base of core.
2	2-1/4"	To base of core.
3	2-1/4"	To base of core.
4	2-1/4"	To base of core.
5	2-3/4"	To base of core.

Average: 2.55".

APPENDIX F

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: E2

Weapon No. [REDACTED]

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 300 Yd

Target Type: Brick Wall, 8-1/2" Thick

Post Ammunition: Cartridge, Caliber .250, AP

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	1-1/4"	To base of core.
2	1-1/4"	To base of core.
3	1-1/4"	To base of core.
4	1-1/2"	To base of core.
5	1-1/2"	To base of core.
Average:		1.40".

APPENDIX P

PENETRATION FIRING DATA

Date: 6 April 1950

Time Started:

Time Finished:

Weapon, Type: M2

Weapon No.

Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 300 Yd

Target Type: Brick Wall, 3-1/2" Thick

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	1"	To base of core. Functioned.
2	1"	To base of core. Functioned.
3	1-1/3"	To base of core. Functioned.
4	1"	To base of core. Functioned.
5	1"	To base of core. Functioned.
Average: 1.015"		

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950      Time Started:      Time Finished:  
Weapon, Type: T25      Weapon No.:      Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours: 46°F  
Density: 1.057      Wind: N, 23 mph      Weather: Clear      Range: 100 Yd  
Target Type: 1-1/2" Armor Plate at Normal  
Test Ammunition: Cartridge, Caliber .30, Ball, M104

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	5/32"	Core did not remain in plate. Diameter of crater 5/8".
2	1/4"	Core did not remain in plate.
3	1/4"	Core did not remain in plate.
4	5/16"	Core did not remain in plate.
5	1/4"	Core did not remain in plate.
6	5/32"	Core did not remain in plate.
7	1/4"	Core did not remain in plate.
8	1/4"	Core did not remain in plate.
9	1/4"	Core did not remain in plate.
10	1/4"	Core did not remain in plate.

Depth, Average: .237"

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Clear

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at Normal

Test Ammunition: Cartridge, Caliber .50, AP, T93

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	9/16"	Core did not remain in plate. Diameter of crater 1/2".
2	5/8"	Core did not remain in plate.
3	9/16"	Core did not remain in plate.
4	5/8"	Core did not remain in plate.
5	9/16"	Core did not remain in plate.
6	19/32"	Core did not remain in plate.
7	5/8"	Core did not remain in plate.
8	9/16"	Core did not remain in plate.
9	19/32"	Core did not remain in plate.
10	19/32"	Core did not remain in plate.

Depth, Average: .590".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950

Time Started:

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature: [REDACTED] 0 Hours:

Density:

Wind:

Week: [REDACTED] Clear

Ranges: 100 Yd

Target Type: 1-1/2" Armor Plate at Normal

Test Ammunition: Cartridge, Caliber .50, API, T101

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	9/16"	Core did not remain in plate. Functioned.
2	9/16"	Core did not remain in plate. Functioned.
3	9/16"	Core did not remain in plate. Functioned.
4	9/16"	Core did not remain in plate. Functioned.
5	9/16"	Core did not remain in plate. Functioned.
6	17/32"	Core did not remain in plate. Functioned.
7	17/32"	Core did not remain in plate. Functioned.
8	17/32"	Core did not remain in plate. Functioned.
9	17/32"	Core did not remain in plate. Functioned.
10	9/16"	Core did not remain in plate. Functioned.

Depth, Average: .550".

Average Diameter of Crater: 1/4".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950      Time Started: [REDACTED]      Time Finished: [REDACTED]  
Weather, Time: EN2      Weapon No.: 3      Previous Rounds: [REDACTED]  
Ammunition Temperature: Ambient      [REDACTED] at 1200 hours:  
Penalty:      Wind:      Weather: Clear      Range: 100 Yd  
Target Two: 1-1/2" Armor Plate at Normal  
Test Ammunition: Cartridge, Caliber .200, Ball

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	1/32"	Core did not remain in plate. Average Diameter of Crater: 5/64".
2	1/32"	Core did not remain in plate.
3	1/32"	Core did not remain in plate.
4	3/32"	Core did not remain in plate.
5	5/64"	Core did not remain in plate.
6	5/64"	Core did not remain in plate.
7	1/32"	Core did not remain in plate.
8	1/32"	Core did not remain in plate.
9	5/64"	Core did not remain in plate.
10	3/64"	Core did not remain in plate.

Depth, Average: .029".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950 Time Started: Time Finished:  
Weapon, Type: M12 Weapon No.: 3 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature and 1200 Hours:  
Density: Winds Weather: Clear Range: 100 Yd  
Target Type: 1-1/2" armor Plate at Normal  
Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	5/8"	Core did not remain in place. Diameter of Crater: 1/4".
2	3/8"	Core did not remain in plate.
3	3/3"	Core did not remain in plate.
4	3/8"	Core did not remain in plate.
5	3/3"	Core did not remain in plate.
6	3/8"	Core did not remain in plate.
7	3/8"	Core did not remain in plate.
8	3/8"	Core did not remain in plate.
9	3/8"	Core did not remain in plate.
10	3/8"	Core did not remain in plate.

Depth, Average: .375".

APPENDIX P

PENETRATION FIRING DATA

Date: 7 April 1950

Time Started:

Time Finished:

Weapon, Type: EMP

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 0800 Hours:

Density: Wind:

Weather: Clear

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at Normal

Test Ammunition: Cartridge, Caliber .280, API

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	3/8"	Core did not remain in plate. Functioned.
2	3/8"	Core did not remain in plate. Functioned.
3	7/16"	Core did not remain in plate. Functioned.
4	5/8"	Core did not remain in plate. Functioned.
5	7/16"	Core did not remain in plate. Functioned.
6	7/16"	Core did not remain in plate. Functioned.
7	5/8"	Core did not remain in plate. Functioned.
8	3/4"	Core did not remain in plate. Functioned.
9	5/8"	Core did not remain in plate. Functioned.
10	3/8"	Core did not remain in plate. Functioned.

Depth, Average: .393".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1325 Time Finished: 1340  
Weapon, Type: T25 Weapon No.: 10 Previous Rounds:  
Ammunition Temperature: Ambient Daily Temperature at 1000 Hours: 44°F  
Density: 1.06 Wind: SSW, 10 mph Weather: Overcast Range: 100 Yd  
Target Type: 1-1/2" Armor Plate at 20°  
Test Ammunition: Cartridge, Caliber .30, Ball, T1C4

TEST NO.	DEPTH OF PENETRATION	REMARKS
1	3/16"	Core did not remain in plate.
2	3/16"	Core did not remain in plate.
3	7/32"	Core did not remain in plate.
4	1/8"	Core did not remain in plate.
5	1/8"	Core did not remain in plate.
6	7/32"	Core did not remain in plate.
7	1/8"	Core did not remain in plate.
8	1/8"	Core did not remain in plate.
9	2/16"	Core did not remain in plate.
10	5/32"	Core did not remain in plate.

Depth, Average: .165".

Crater Size: 1/2"x5/8".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1240 Time Finished: 1300

Weapon, Type: M25 Weapon No.: 10 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Clear Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 20°

Test Ammunition: Cartridge, Caliber .30, AP, T93

HIT NO.	DEPTH OF PENETRATION	REMARKS
1		Core did not remain in plate. Crater size 1/2"x 7/16".
2	5/8"	Core did not remain in plate.
3	19/32"	Core did not remain in plate.
4	15/32"	Core did not remain in plate.
5	5/8"	Core did not remain in plate.
6	5/8"	Core did not remain in plate.
7	5/8"	Core did not remain in plate.
8	5/8"	Core did not remain in plate.
9	5/8"	Core did not remain in plate.
10	5/8"	Core did not remain in plate.

Depth, Average: .556".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1305

Time Finished: 1320

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Barometric Pressure: 29.9200 Hours:

Density: Wind:

Weather: Overcast Range: 100 Ya

Target Type: 1-1/2" Armor plate at 20°

Test Ammunition: Cartridge, Caliber .30, API, T101

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	9/16"	Core did not remain in plate. Functioned.
2	9/16"	Core did not remain in plate. Functioned.
3	1/2"	Core did not remain in plate. Functioned.
4	1/2"	Core did not remain in plate. Functioned.
5	9/16"	Core did not remain in plate. Functioned.
6	9/16"	Core did not remain in plate. Functioned.
7	9/16"	Core did not remain in plate. Functioned.
8	9/16"	Core did not remain in plate. Functioned.
9	9/16"	Core did not remain in plate. Functioned.
10	1/2"	Core did not remain in plate. Functioned.

Depth, Average: .543".

Crater Size: 3/8"x5/8".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950 Time Started: 1105 Time Finished: 1120

Weapon, Type: EME Weapon No.: 3 Previous Rounds:

Ammunition Temperature: Ambient Daily Temperature at 1200 Hours:

Density: Wind: Weather: Clear Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 20°

Test Ammunition: Cartridge, Caliber .250, Ball

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	1/32"	Core did not remain in plate.
2	1/32"	Core did not remain in plate.
3	3/32"	Core did not remain in plate.
4	1/32"	Core did not remain in plate.
5	1/32"	Core did not remain in plate.
6	1/32"	Core did not remain in plate.
7	1/32"	Core did not remain in plate.
8	1/32"	Core did not remain in plate.
9	1/32"	Core did not remain in plate.
10	1/32"	Core did not remain in plate.

Depth, Average: .025".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950      Time Started: 1000      Time Finished: 1035  
Weapon, Type: M2      Weapon No.: 3      Previous Rounds:  
Ammunition Temperature: Ambient      Daily [REDACTED] 44°F  
Density: 1.004      Wind: SSE, 10 mph      Weather: Overcast      Range: 100 Yd  
Target Type: 1-1/2" Armor Plate at 20°  
Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	3/8"	Core did not remain in plate. Crater Size: 1/4" x 5/16".
2	15/32"	Core did not remain in plate.
3	3/8"	Core did not remain in plate.
4	3/8"	Core did not remain in plate.
5	15/32"	Core did not remain in plate.
6	3/8"	Core did not remain in plate.
7	15/32"	Core did not remain in plate.
8	3/8"	Core did not remain in plate.
9	3/8"	Core did not remain in plate.
10	15/32"	Core did not remain in plate.

Total of 13 rounds fired. Eight cores remained lodged in plate. Bases broke off making measurements impossible.

Depth, Average: .387".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1960

Time Started: 1040

Time Finished: 1100

Weapon Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Hours:

Density:

Wind:

Weather: Clear

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 20°

First Commission: Cartridge, Caliber .50, API

HIT NO.	DEPTH OF PENETRATION	REMARKS
1	3/8"	Core did not remain in plate. Functioned.
2	13/32"	Core did not remain in plate. Functioned.
3	3/8"	Core did not remain in plate. Functioned.
4	3/8"	Core did not remain in plate. Functioned.
5	3/8"	Core did not remain in plate. Functioned.
6	17/32"	Core did not remain in plate. Functioned.
7	3/8"	Core did not remain in plate. Functioned.
8	13/32"	Core did not remain in plate. Functioned.
9	3/8"	Core did not remain in plate. Functioned.
10	3/8"	Core did not remain in plate. Functioned.

Total of 12 rounds fired. Two cores remained lodged in plate. Bases broke off making measurement impossible.

Depth, average: .504"  
Crater Size: 1/4" x 5/8"

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1505

Time Finished:

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

44°F

Density: 1.034 Wind: SSE, 10 mph Weather: Overcast Range: 100 Yd

Target Type: 1-1/2" Armor Plates at 30°

Test Ammunition: Cartridge, Caliber .30, Ball, M104

HIT NO.	PENETRATION		REMARKS
	DEPTH	CRATER	
1	5/32"	17/32"	Core did not remain in plate.
2	1/32"	5/8"	Core did not remain in plate.
3	1/32"	5/16"	Core did not remain in plate.
4	5/32"	9/16"	Core did not remain in plate.
5	5/32"	9/16"	Core did not remain in plate.
6	1/32"	9/16"	Core did not remain in plate.
7	5/32"	9/16"	Core did not remain in plate.
8	1/32"	17/32"	Core did not remain in plate.
9	3/32"	17/32"	Core did not remain in plate.
10	1/32"	9/16"	Core did not remain in plate.

Average Crater Width: 5/8".

Depth, Average: .056".

Length, Average: .559".

## APPENDIX F

## PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1345

Time Finished: 14:55

Weapon, Type: T25

### Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 44° F

Density: 1.034

Wind: SSW, 10 mph

**Weather:** Overcast

Range: 100 Yd

Target Type: 1-1/2" armor plate at 30°

Test Ammunition: Cartridges, Caliber .30, M1, 193

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	9/16"	11/16"	Core did not remain in plate.
2	17/32"	11/16"	Core did not remain in plate.
3	9/16"	5/8"	Core did not remain in plate.
4	9/16"	5/8"	Core did not remain in plate.
5	27/32"	5/8"	Core did not remain in plate.
6	1/2"	11/16"	Core did not remain in plate.
7	9/16"	5/8"	Core did not remain in plate.
8	5/8"	11/16"	Core did not remain in plate.
9	9/16"	5/8"	Core did not remain in plate.
10	9/16"	5/8"	Core did not remain in plate.

Average Crater Width, 3/8".

Total of 29 rounds fired. Nineteen cartridges remained in plates. Based on these measurements impossible.

Depth, Average: .556".

Length, average: .650".

APPENDIX P

PENETRATION FIRING DATA

Date: 10 April 1950

Time Started: 1455

Time Finished: 1505

Weapon, Type: M2

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Initial Temperature at 1400 Hours:

Density: Wind:

Weather: Overcast Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 30°

Test Ammunition: Cartridge, Caliber .50, API, T1C1

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	3/16"	15/16"	Core did not remain in plate. Functioned.
2	3/16"	7/8"	Core did not remain in plate. Functioned.
3	1/8"	5/8"	Core did not remain in plate. Functioned.
4	1/4"	7/8"	Core did not remain in plate. Functioned.
5	3/16"	15/16"	Core did not remain in plate. Functioned.
6	3/16"	7/8"	Core did not remain in plate. Functioned.
7	5/32"	7/8"	Core did not remain in plate. Functioned.
8	1/8"	5/4"	Core did not remain in plate. Functioned.
9	5/32"	7/8"	Core did not remain in plate. Functioned.
10	5/32"	7/8"	Core did not remain in plate. Functioned.

Metal gouged out.  
Average Crater Width: 1/4".  
Depth, Average: .171".  
Length, Average: .850".

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1100

Time Finished: 1110

Weapon, Type: E2

Weapon No.

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Rain

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 30°

Test Ammunition: Cartridge, Caliber .280, Ball

PENETRATION			REMARKS
HIT NO.	DEPTH	LENGTH	
1	1/32"	1/6"	Core did not remain in plate.
2	1/32"	1/6"	Core did not remain in plate.
3	1/32"	1/8"	Core did not remain in plate.
4	1/32"	1/8"	Core did not remain in plate.
5	1/32"	1/8"	Core did not remain in plate.
6	1/32"	1/8"	Core did not remain in plate.
7	1/32"	1/3"	Core did not remain in plate.
8	1/32"	1/8"	Core did not remain in plate.
9	1/32"	1/16"	Core did not remain in plate.
10	1/32"	1/16"	Core did not remain in plate.

Average Width of Crater: 1/8".

Length, Average: .020".

Depth, Average: .112".

~~CONFIDENTIAL~~

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1025

Time Finished: 1040

Weapon, Type: EM2

Weapon No. [REDACTED] Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 52°F

Density: 1.025

Wind: Calm

Weather: Rain

Ranges: 100 Yd

Target Type: 1-1/2" Armor Plate at 30°

Test Ammunition: Cartridge, Caliber .200, AP

HIT NO.	PENETRATION		NOTES
	DEPTH	WIDTH	
1	3/16"	5/8"	Cores did remain in plates. Metal gouged out only.
2	5/32"	5/8"	Cores did remain in plates.
3	5/32"	5/8"	Cores did remain in plates.
4	3/16"	5/8"	Cores did remain in plates.
5	5/32"	5/8"	Cores did remain in plates.
6	7/32"	5/8"	Cores did remain in plates.
7	5/32"	5/8"	Cores did remain in plates.
8	3/16"	5/4"	Cores did remain in plates.
9	3/16"	5/8"	Cores did remain in plates.
10	3/16"	3/4"	Cores did remain in plates.

Average Width of Crater: 1/4".

Depth, Average: .178".

Length, Average: .650".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950 Time Started: 1045 Time Finished: 1050  
Weapon, Type: BM2 Weapon No.: [REDACTED] Previous Rounds:  
Ammunition Temperature: Ambient Dry Temperature at 1200 Hours:  
Density: Wind: Weather: Fair Range: 100 Yd  
Target Type: 1-1/2" Armor Plate at 30°  
Test Ammunition: Cartridge, Caliber .260 API

KIT NO.	PENETRATION		REMARKS
	Depth	Width	
1	3/16"	3/4"	Core did not remain in plate. Functioned.
2	3/16"	1/2"	Core did not remain in plate. Functioned.
3	3/16"	5/8"	Core did not remain in plate. Functioned.
4	1/8"	5/8"	Core did not remain in plate. Functioned.
5	3/16"	5/8"	Core did not remain in plate. Functioned.
6	3/16"	1/4"	Core did not remain in plate. Functioned.
7	5/32"	1/4"	Core did not remain in plate. Functioned.
8	1/8"	9/16"	Core did not remain in plate. Functioned.
9	3/16"	5/8"	Core did not remain in plate. Functioned.
10	5/32"	5/8"	Core did not remain in plate. Functioned.

Average Width of Crater: 1/4".

Depth, Average: .138".

Length, average: .665".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1500

Time Finished: 1510

Weapon, Type: T25

Weapon No.: 10 [REDACTED] as Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 52°F

Density: 1.025 Wind: Calm

Weather: Overcast

Range: 100 Yd

Target Type: 1-1/2" armor Plate at 40°

Test Ammunition: Cartridge, Caliber .50, Ball, T1C4

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	1/16"	1/2"	Core did not remain in plate.
2	1/16"	1/2"	Core did not remain in plate.
3	5/32"	1/2"	Core did not remain in plate.
4	3/64"	7/16"	Core did not remain in plate.
5	1/16"	1/2"	Core did not remain in plate.
6	1/16"	7/16"	Core did not remain in plate.
7	5/64"	1/2"	Core did not remain in plate.
8	1/16"	1/2"	Core did not remain in plate.
9	1/16"	1/2"	Core did not remain in plate.
10	1/16"	1/2"	Core did not remain in plate.

Average Crater Width: 3/8".

Depth, Average: .0578".

Length, Average: .4875".

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950      Time Started: 1130      Time Finished: 1140  
Weapon, Type: T23      Weapon No.: 10 [REDACTED] Previous Rounds:  
Ammunition Temperature: Ambient      Daily Temperature at 1200 Hours:  
Density:      Wind:      Weather:      Range: 100 Yd  
Target Type: 1-1/2" armor Plate at 40°  
Test Ammunition: Cartridge, Caliber .50, AP, T93

HIT NO.	PENETRATION		REMARKS
	DEPTH	LENGTH	
1	1/8"	1"	
2	1/8"	7/8"	
3	5/32"	15/16"	
4	5/32"	15/16"	
5	1/8"	7/8"	
6	1/8"	1"	
7	1/8"	3/4"	
8	1/8"	7/8"	
9	1/8"	15/16"	
10	5/32"	3/4"	

Average Width of Crater: 5/16"  
Depth, Average: .1547"  
Length, Average: .8958"

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1145

Time Finished: 1150

Weapon, Type: T25

Weapon No.: 10

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather:

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .50, API, T101

PENETRATION			REMARKS
HIT NO.	DEPTH	LENGTH	
1	3/32"	5/8"	Functioned
2	3/32"	5/8"	Functioned
3	7/16"	1/2"	Functioned
4	1/8"	5/8"	Functioned
5	3/32"	5/8"	Functioned
6	1/8"	5/8"	Functioned
7	7/16"	5/8"	Functioned
8	5/32"	5/8"	Functioned
9	1/8"	1/2"	Functioned
10	1/8"	5/8"	Functioned

Average crater width: 5/16"  
Depth, Average: .1095"  
Length, Average: .6000"

APPENDIX R

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1550

Time Finished: 1355

Weapon, Type: EWP

Weapon No. ~~44~~ Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density:

Wind:

Weather: Rain

Range: 100 Yd

Target Type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .280, Ball

PENETRATION			REMARKS
HIT NO.	DEPTH	LENGTH	
1	1/32"	1/6"	
2	1/32"	1/6"	
3	1/32"	1/6"	
4	1/32"	1/6"	
5	1/32"	1/6"	
6	1/32"	1/6"	
7	1/32"	1/6"	
8	1/32"	1/6"	
9	1/32"	1/6"	
10	1/32"	1/6"	

Average crater width: 1/8"  
Depth, Average: .0156"  
Length, Average: .1250"

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1325

Time Finished: 1335

Weapon, Type: EM2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours: 52°F

Density: 1.025

Wind: Calm

Weather:

Range: 100 Yd

Target Type: 1-1/2" armor plate at 40°

Test Ammunition: Cartridge, Caliber .280, AP

HIT NO.	DATE	PENETRATION	REMARKS
1	3/16"	5/8"	
2	3/16"	5/4"	
3	1/8"	5/8"	
4	1/8"	5/4"	
5	1/8"	5/8"	
6	3/16"	9/16"	
7	1/8"	9/16"	
8	1/8"	5/8"	
9	3/16"	5/8"	
10	5/32"	5/8"	

Average width of crater 1/4"  
Depth, Average .1531"  
Length, Average .8375"

APPENDIX P

PENETRATION FIRING DATA

Date: 11 April 1950

Time Started: 1340

Time Finished: 1345

Weapon, Type: M2

Weapon No.: 3

Previous Rounds:

Ammunition Temperature: Ambient

Daily Temperature at 1200 Hours:

Density: Wind:

Weather: Range 100 Yd

Target type: 1-1/2" Armor Plate at 40°

Test Ammunition: Cartridge, Caliber .28C, API

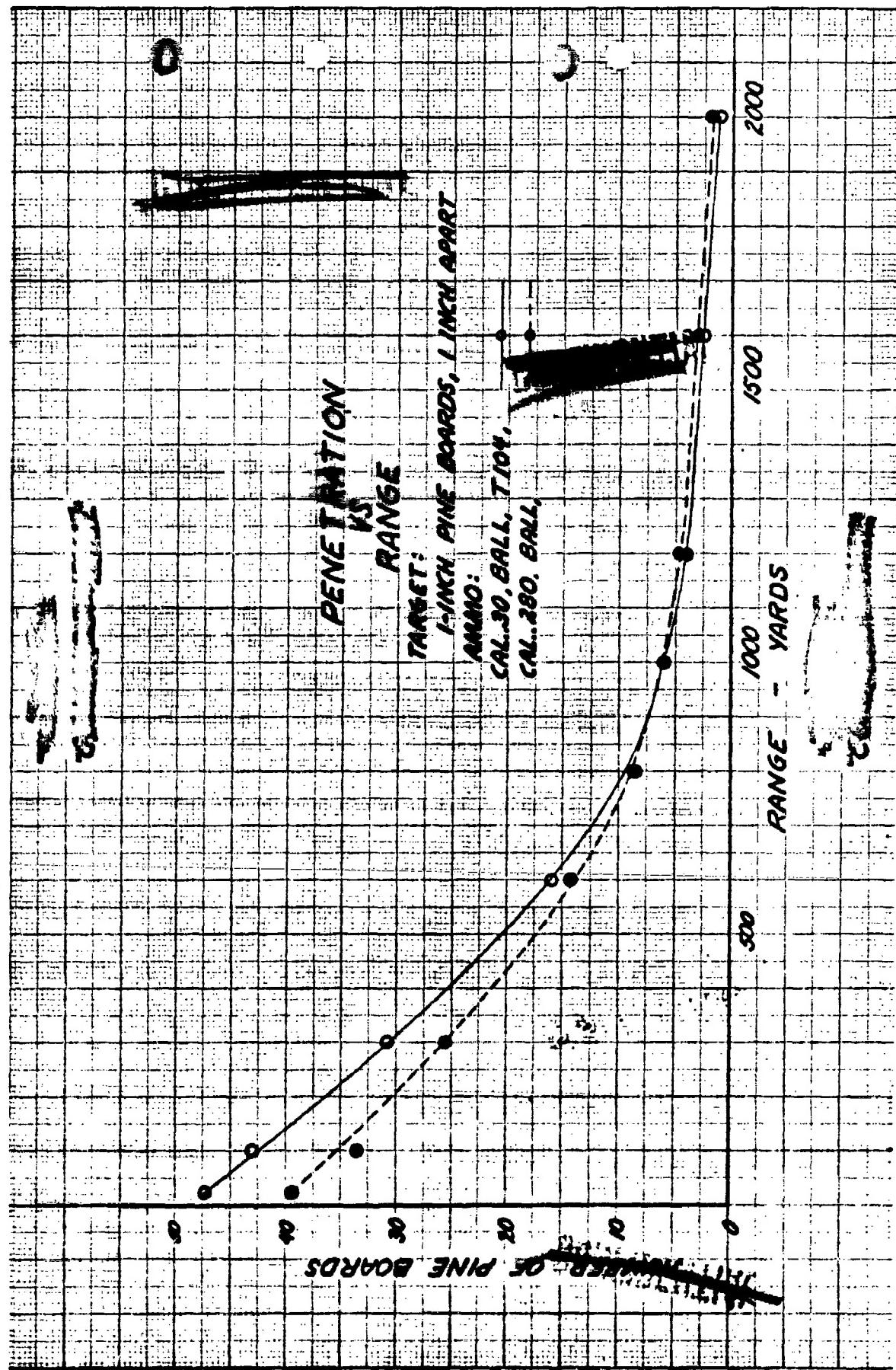
PENETRATION			REMARKS
HIT NO.	DEPTH	LENGTH	
1	3/16"	9/16"	Functioned
2	5/16"	1 1/2"	Functioned
3	1 1/8"	9/16"	Functioned
4	1 1/8"	5/16"	Functioned
5	5/16"	5/8"	Functioned
6	3/8"	5/16"	Functioned
7	7/16"	5/8"	Functioned
8	3/16"	9/16"	Functioned
9	3/16"	5/8"	Functioned
10	1/8"	5/8"	Functioned

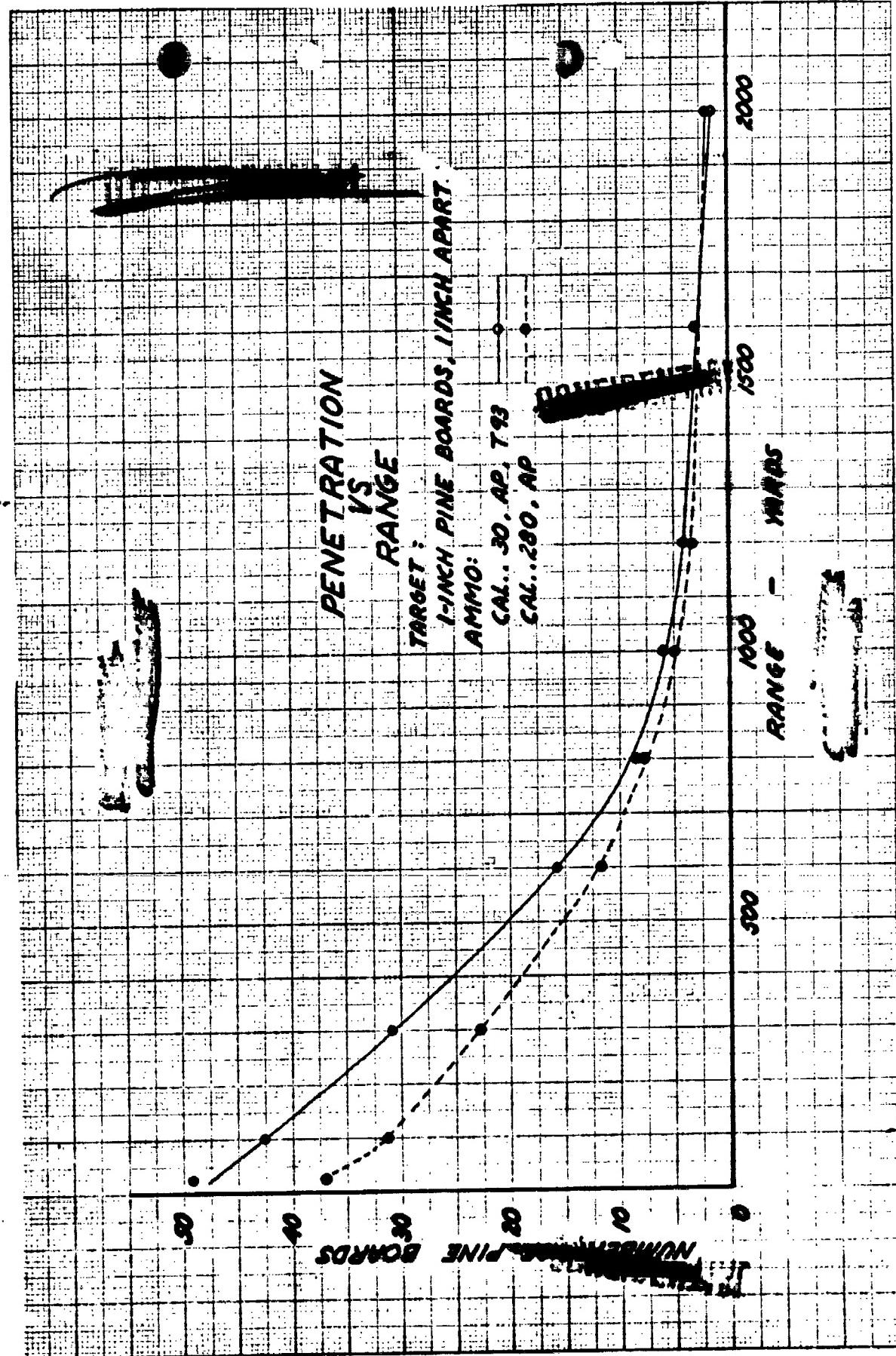
Average crater width: 1/4"  
Depth, average: .1656"  
Length, average: .5957"

APPENDIX Q

Penetration Curves

(8 curves)





PRECISE

**PENETRATION  
VS  
RANGE**

**TARGET: 1-INCH PINE BOARDS, 11/16" APART**

**AMMO:**

**CAL..30. API. T/OL.**

**CAL..30. API.**

**2000**

**1500**

**1000**

**500**

**0**

**NO. 60000 00 00 00 00 00**

**379**

**MINIMUM PENETRATION PINE BOARDS**

**"PRECISE"**

PENETRATION  
VS  
RANGE

TARGET:

10-GA. MILD STEEL PLATE  
4 INCHES APART

AMMO:

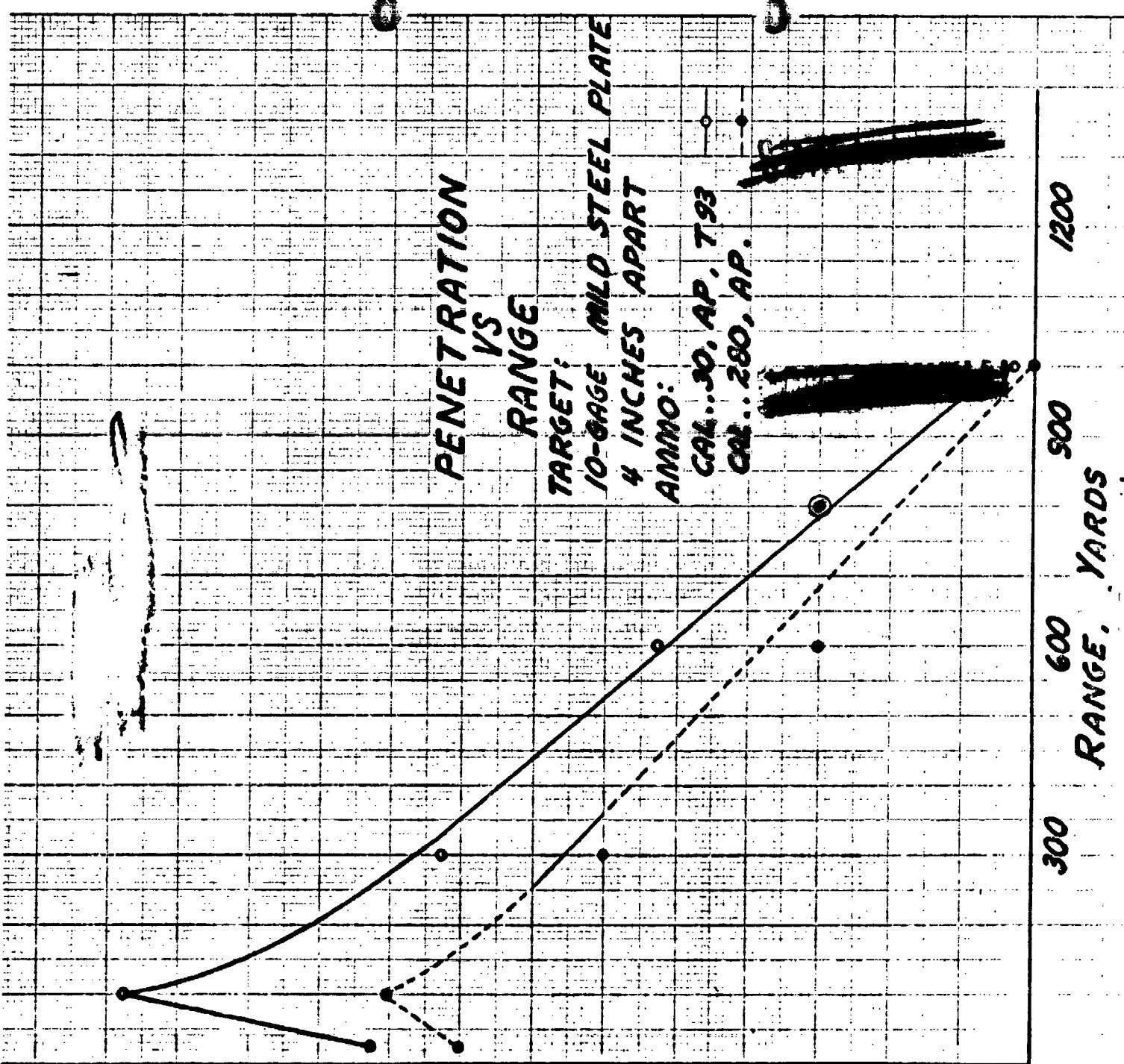
CAL. .30. BALL. T 104  
CAL. .280. BALL

1200  
900  
600  
300

RANGE, YARDS

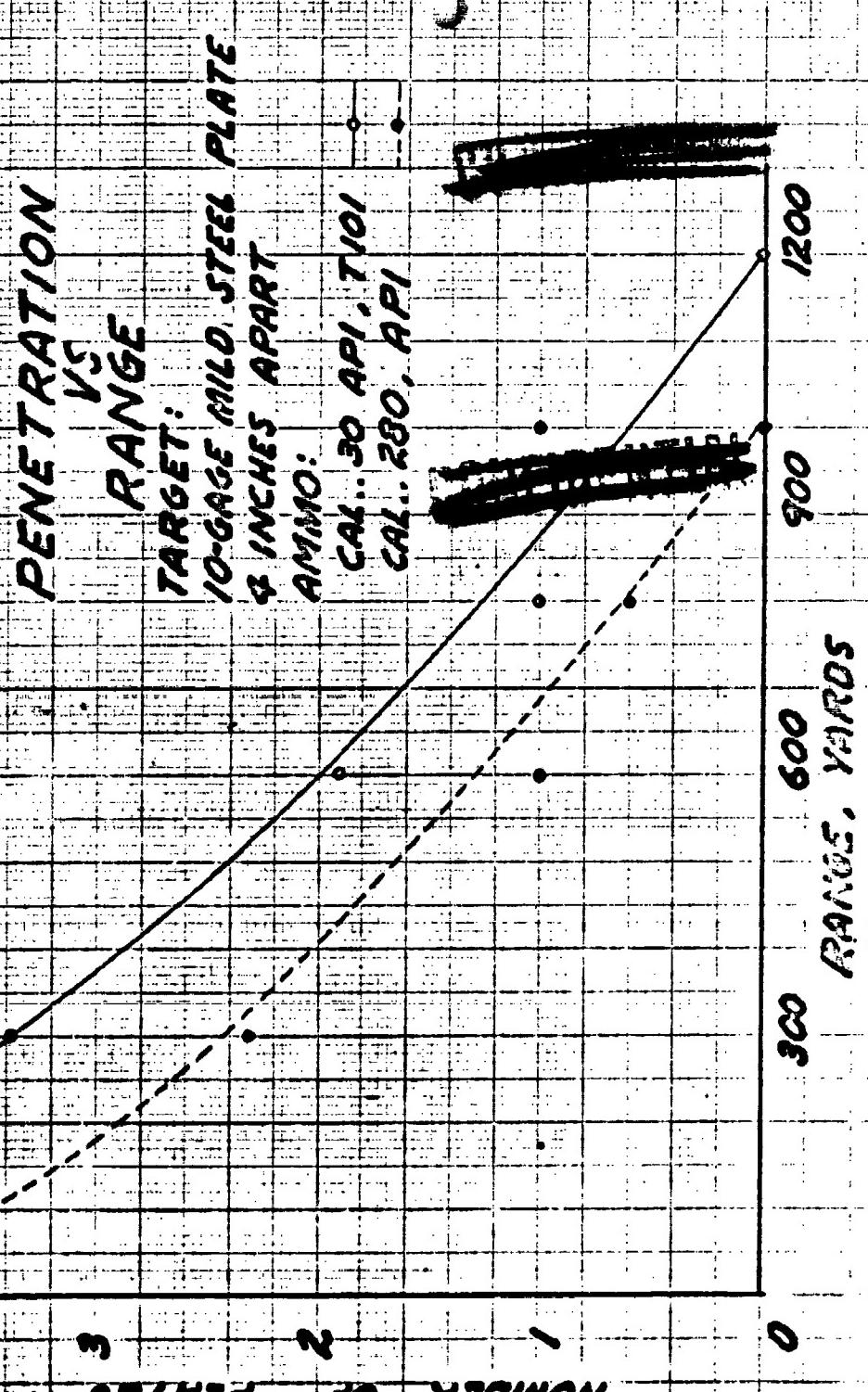
3 2 1 0

NUMBER OF PLATES



5 4 3 2 1 0 NUMBER OF PLATES

301



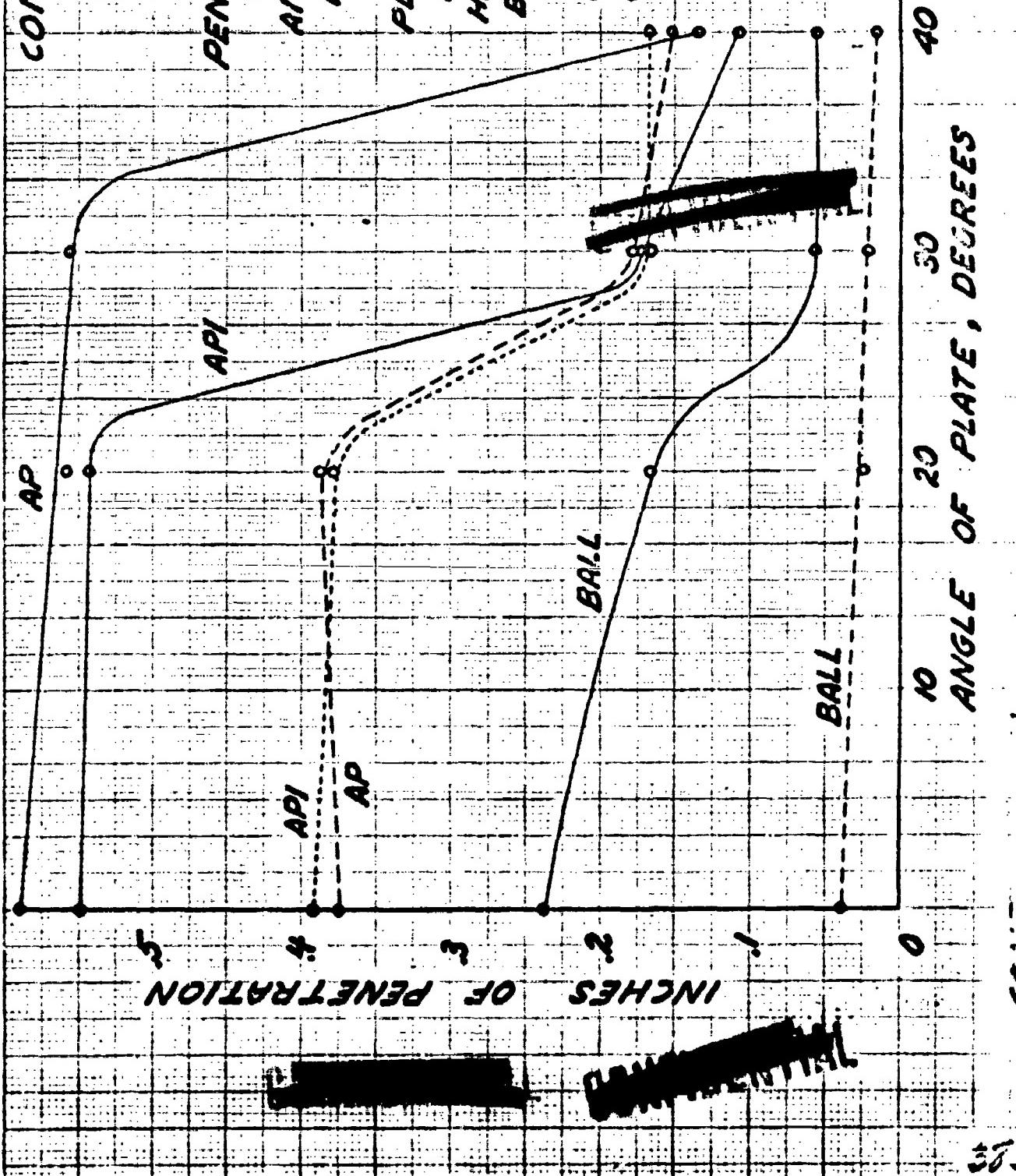
NUMBER OF PLATES

25-1

~~CONFIDENTIAL~~

PENETRATION  
VS  
ANGLE OF  
PLATE

PLATE:  
1 1/2-IN. HOMO-  
HARD, 286.  
BRINELL  
AMMO:  
CAL..30  
CAL..280



383

~~CONFIDENTIAL~~

PENETRATION  
VS  
RANGE

TARGET:

BRICK WALL, 8½-IN. THICK

AMMO:

CAL..30

CAL..280

PENETRATION, IN INCHES

5

4

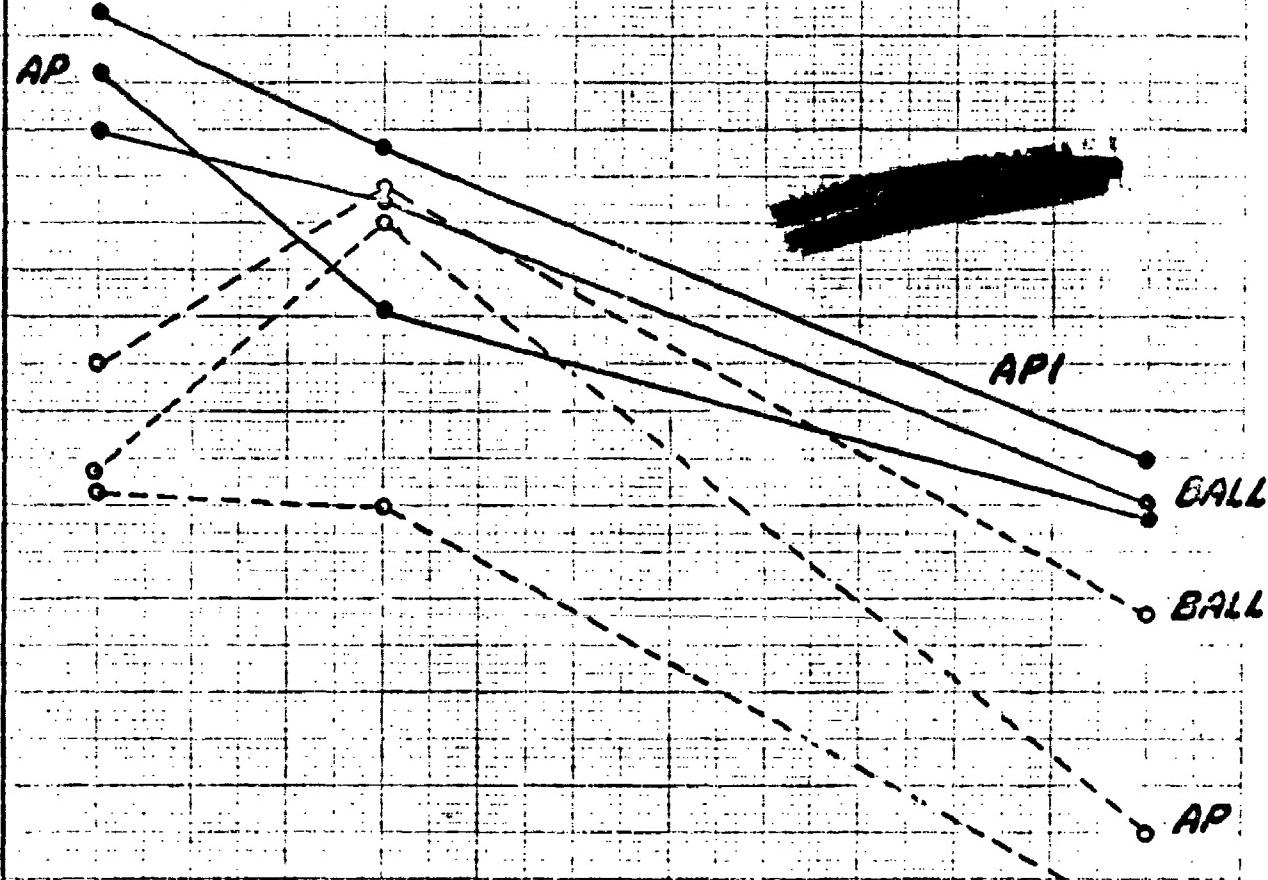
3

2

1

0

100 200  
RANGE, YARDS



386

APPENDIX R

FIRING DATA FOR OBSERVING AMMUNITION

(8 Sheets)

APPENDIX R

8 May 1950

AMMUNITION: Cartridge, Cal. .30, Spotting, T103, Lot No. 2

WEAPON: Accuracy Barrel No. 5 fitted to 1903 Action No. 1528613

RANGE - 1000 Yards

TARGETS: Brick wall, 8-1/2" thick  
Hard cinder road  
Sand firing butts  
Grassy Field  
Scrub Brush

TEMP: 49°F

DENSITY: 1.055

<u>TIME</u>	<u>RD</u>	<u>TARGET</u>	<u>HIT</u>	<u>FUNCT.</u>	<u>REMARKS</u>
1030	1	Sand	No		
	2	Sand	No		
	3	Grass	No		
	4	Sand	No		
	5	Grass	No		
	6	Grass	No		
	7	Sand	No		
	8	Sand	No		
	9	Sand	No		
	10	Sand	No		
	11	Sand	No		
	12	Grass	No		
	13	Sand	OK		Smoke not visible from gun.
	14	Sand	OK		" " " " "
	15	Sand	No		
	16	Grass	No		
	17	Grass	No		
	18	Grass	OK		Smoke not visible at gun.
	19	Brush	No		
	20	Brush	No		
	21	Road	No		
	22	Road	No		
	23	Grass	No		
	24	Wood	No		
	25	Sand	No		

APPENDIX R

<u>TIME</u>	<u>ID</u>	<u>TARGET</u>	<u>FUNCT.</u>	<u>REMARKS</u>
		HIT		
26		Brick	OK	Large flash and smoke.
27		Sand	No	
28		Brush	No	
29		Sand	No	
30		Brick	No	
31		Brick	OK	Large flash and smoke.
32		Brush	No	
33		Sand	No	
34		Lost		
35		Road	No	
36		Grass	No	
37		Brick	OK	Large flash and smoke.
38		Brick	OK	" " " "
39		Grass	No	
40		Brick	OK	Large flash and smoke
41		Grass	No	
42		Road	No	
43		Grass	No	
44		Road	OK	Good flash.
45		Brick	OK	" "
46		Brick	OK	" "
47		Road	No	
48		Grass	No	
49		Brick	OK	Local flash
50		Brick	OK	" "
51		Sand	No	
52		Brick	OK	Good flash.
53		Brick	OK	" "
54		Brick	OK	" "
55		Brick	OK	" "
56		Brick	OK	" "
57		Grass	No	
58		Brick	OK	Good flash.
59		Brick	OK	" "
60		Road	OK	No flash.
61		Road	No	
62		Road	No	
63		Road	No	
64		Road	OK	No flash.
65		Sand	No	
66		Brick	OK	No flash

APPENDIX R

<u>TIME</u>	<u>RD</u>	<u>TARGET</u>	<u>HIT</u>	<u>FUNCT.</u>	<u>REMARKS</u>
67		Sand	No		
68		Brick	No		
69		Road	OK		Fair flash.
70		Brick	OK		Large flash.
71		Brick	OK		" "
72		Brick	OK		" "
73		Grass	No		
74		Brick	OK		Large flash.
75		Grass	No		
76		Brick	OK		Large flash.
77		Brick	OK		" "
78		Road	No		
79		Brick	OK		Large flash.
80		Road	OK		Good flash.
81		Road	No		
82		Grass	No		
83		Brush	No		
84		Brush	No		
85		Brush	No		
86		Road	OK		Functioned after ricochet.
87		Brick	OK		Good flash.
88		Road	No		
89		Grass	No		
90		Grass	No		
91		Road	No		
92		Grass	No		

APPENDIX B

FIRING DATA

AMMUNITION: Cartridge, S.A., Cal. .280, Observing Lot 17A

GUN: Mamm Barrel, 450/3, fitted to a P-17 Receiver

RANGE - 1000 Yards

TEMP - 45° F

DENSITY - 1.062

TARGETS: Brick wall, 8-1/2" thick  
Hard Cinder Road  
Sand Firing Butt  
Small Scrub Brush  
Grassy Field

<u>TIRE</u>	<u>RD</u>	<u>TARGET STRUCK</u>	<u>FUNCTION</u>	<u>REMARKS</u>
0925	1	Locators		
	2	"		
	3	Grass	OK	Small flash.
	4	Lost		
	5	Sand	OK	No flash, little smoke.
	6	Brick	OK	Good flash and smoke.
	7	Grass	OK	No flash.
	8	Brick	OK	Good flash and smoke.
	9	Brick	OK	" " " "
	10	Brick	OK	Small flash and smoke.
	11	Brick	OK	Good flash and smoke.
	12	Brick	OK	" " " "
	13	Grass	No	
	14	Brick	OK	Good flash.
	15	Grass	OK	" "
	16	Road	OK	" "
	17	Road	OK	" "
	18	Wood	OK	" "
	19	Brick	OK	" "
	20	Brick	OK	" "
	21	Brick	OK	" "
	22	Brick	OK	" "
	23	Brick	OK	" "

APPENDIX R

<u>TILE</u>	<u>RD</u>	<u>TARGET STRUCK</u>	<u>FUNCTION</u>	<u>REMARKS</u>
24		Brick	OK	Good flash.
25		Brick	OK	" "
26		Brick	OK	" "
27		Grass	OK	No flash.
28		Grass	No	Little flash.
29		Brick	OK	Good flash.
30		Road	No	
31		Grass	OK	No flash.
32		Grass	OK	Little flash.
33		Road	No	Good flash.
34		Grass	OK	" "
35		Road	OK	Little flash.
36		Grass	OK	
37		Road	OK	
38		Grass	OK	Very little, not visible at 1000 yards.
39		Road	No	
40		Lost	—	
41		Road	No	
42		Lost	--	
43		Road	OK	No flash.
44		Grass	OK	Little flash.
45		Grass	No	
46		Road	OK	No flash.
47		Brick	OK	Good flash.
48		Grass	No	Little flash.
49		Grass	No	
50		Grass	OK	No flash.
51		Grass	No	
52		Brick	OK	Little flash.
53		Grass	OK	" "
54		Grass	OK	" "
55		Road	No	" "
56		Grass	OK	Good flash.
57		Grass	OK	" "
58		Grass	OK	
59		Grass	OK	
60		Wood	OK	
61		Road	OK	
62		Brush	No	
63		"	No	
64		Lost		
65		Lost	No	

APPENDIX

<u>TIME</u>	<u>HD</u>	<u>TARGET</u>	<u>FUNCTION</u>	<u>REMARKS</u>
		<u>HIT</u>		
66		Brush	No	
67		"	No	
68		"	No	
69		"	No	
70		"	OK	
71		"	OK	
72		Lost		
73		Brush	No	
74		Brush	No	
75		Sand	OK	
76		Sand	OK	
77		Sand	OK	
78		Sand	OK	
79		Sand	OK	
80		Sand	No	
81		Muzzle Burst		
82		Sand	OK	
83		Sand	OK	
84		Sand	OK	
85		Sand	OK	
86		Sand	OK	Visible at 1000 yards
87		Sand	OK	
88		Sand	OK	

APPENDIX R

FIRING DATA

AMMUNITION: Cartridge, 7.92 mm, Spotting.

WEAPON: 7.92 mm Rifle

RANGE: 1000 Yards

TARGETS: Brick wall, 8-1/2" thick  
Sand Firing Butts  
Hard Cinder Road  
Scrub Brush  
Grassy Field

TEMP: 53°F

DENSITY: 1.047

<u>FILE</u>	<u>ID</u>	<u>TARGET</u> <u>HIT</u>	<u>FUNCTION</u>	<u>REMARKS</u>
1215	1	Sand	OK	Visible from gun.
	2	"	"	" " "
	3	"	"	" " "
	4	"	"	" " "
	5	"	"	" " "
	6	"	"	" " "
	7	"	"	" " "
	8	"	"	" " "
	9	"	"	" " "
	10	"	"	" " "
	11	Grass	"	Good flash and good smoke.
	12	Road	"	" " " " "
	13	Grass	"	" " " " "
	14	Road	"	" " " " "
	15	Road	"	" " " " "
	16	Grass	"	" " " " "
	17	Grass	"	" " " " "
	18	Brick	"	" " " " "
	19	Brick	"	" " " " "
	20	Road	"	" " " " "
	21	Road	"	" " " " "

APPENDIX R

<u>TITLE</u>	<u>ID</u>	<u>TARGET</u>	<u>HIT</u>	<u>FUNCTION</u>	<u>REMARKS</u>
22		Brick		OK	Good flash and smoke.
23		"	"	"	" " " "
24		"	"	"	" " " "
25		Road		"	" " " "
26		Wood		"	" " " "
27		Brick		"	" " " "
28		"	"	"	" " " "
29		"	"	"	" " " "
30		Grass		"	" " " "
31		"	"	"	" " " "
32		Road		"	" " " "
33		Grass		"	" " " "
34		Brick		"	" " " "
35		Road		"	" " " "
36		Grass		"	" " " "
37		Brick		"	" " " "
38		Road		"	" " " "
39		Grass		"	" " " "
40		Road		"	" " " "
41		Brush		"	Good smoke.
42		Brush		"	" "
43		Brush		No	
44		Brush		OK	Good smoke.
45		Brush		"	" "
46		Brush		No	
47		Brush		"	
48		Brush		OK	Good smoke.
49		Brush		"	" "
50		Brush		No	
51		Road		OK	Good flash and smoke.
52		Road		"	" " " "
53		Road		"	" " " "

APPENDIX S

Complete Velocity Data of Rifles  
(17 sheets)

APPENDIX S

VELOCITY TEST

Date: 27 February 1950 Time Started: 1055 Time Finished: 1115

Linktronic Receiver No.: 10 Barrel No. [REDACTED] Previous Rounds: 10X 117

Ammunition Temperature: 70°F Range Temperature: 28°F Density: 1.113

Chronograph Type: Counter Initiator Type: Detonite

Test Ammunition: Cartridge, Ball, Caliber .30, T104, Lot PAK-30-1258  
M1 rifle, lightweight, caliber .30, T25

ROUND NO.	INSTRUMENTAL VELOCITY AT 70°, fns	PRESSURE, psi
1	2759	
2	2756	
3	2755	
4	2726	
5	2762	
6	2717	
7	2714	
8	2713	
9	2725	
10	2750	
11	2761	
12	2709	
13	2706	
14	2753	
15	2730	
16	2717	
17	2737	
18	2745	
19	2695	
20	2705	
21	2750	
22	2775	

Values 1, 2 = markers.

6

5

APPENDIX S

VELOCITY TEST      Caliber .30 Rifle, T-25

Date: 17 April 1970      Time Started: 1325      Time Finished: 1345  
Automatic receiver No.: 10      Barrel No.: 10      Previous Rounds: 707  
Ammunition Temperature: +70°F      Range Temperature: +69°F      Density: 1.053  
Chronograph Type: Counter      Initiator Type: Lumilite  
Last ammunition: Cartridge, Ball, Caliber .30, T104, Lot RX-30-1558

ROUND NO.	IMPROVED VELOCITY AT 73°, f/s	PRESSURE, psi
1	2677	
2	2777	
3	2773	
4	2737	
5	2753	
6	2765	
7	2779	
8	2771	
9	2795	
10	2762	
11	2723	
12	2712	
13	2762	
14	2753	
15	2726	
16	2753	
17	2762	
18	2762	
19	2779	
20	2759	
21	2772	
22	2761	
23	2722	
24	2772	
25	2759	

Rounds 1-5 - warmers.

DO NOT USE

APPENDIX S

VELOCITY TEST Caliber .30 Rifle, T- 25

Date: 17 February 1950 Time Started: 0901 Time Finished: 0927

Caliber: .30 Receiver No.: 14 Barrel No.: 14 Gauge Rounds: 7

Ammunition Temperature: 70°F Range Temperature: 38°F Density: 1.074

Instrument Type: Counter Initiator Type: Lumilite

Test Ammunition: Cartridge, Ball, Caliber .30, T-25, Lot No. PANO-1558

NUMBER	INSTRUMENT VELOCITY AT 70°, fps	PRESSURE, psi
1	2700	
2	2725	
3	2654	
4	2630	
5	2702	
6	2630	
7	2657	
8	2657	
9	2660	
10	2632	
11	2668	
12	2650	
13	2643	
14	2673	
15	2660	
16	2723	
17	2742	
18	2656	
19	2703	
20	2657	

APPENDIX S

VELOCITY TEST

Caliber .30 Rifle, T-25

Date: 7 March 1950

Time Started: 1030

Time [redacted] 1050

Muzzle Velocity No.: 14

Barrel No.: 14

Rounds: 615

Ambient Temperature: 70°F

Bungo Temperature: 35°F

Density: 1.105

Initiator type: Lumilite

Test Material: Cartridge, Ball, Caliber .30, TIC+, Lot F.W.C-1358.

TEST NO.

INITIAL VELOCITY AT 721, ft/s

PRESSURE, psi

1	2667
2	2661
3	2677
4	2670
5	Lost
6	2672
7	2703
8	2671
9	2670
10	2667
11	2652
12	2677
13	2600
14	2613
15	2663
16	2677
17	2673
18	2678
19	2641
20	2654
21	2655
22	2667
23	2698
24	2627

Rounds 1-5 - Warmers.

APPENDIX S

VELOCITY TEST

Caliber .30 Rifle, T-25

Date: 17 February 1950

Time Started: 0901

Time Finished: 0927

Automatic Receiver No.: 15

Barrel No.: 15

Previous Rounds: 9

Ammunition Temperature: 70°F

Range Temperature: 23°F

Wind Velocity: 1.074

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Ball, Caliber .30, FMZC-1358.

FIELD NO.	INSTANTANEOUS VELOCITY AT 70', fps	PRESSURE, psi
1	2677	
2	2654	
3	2674	
4	26.8	
5	2654	
6	2671	
7	2717	
8	2637	
9	2662	
10	2660	
11	2671	
12	2643	
13	2630	
14	2673	
15	2640	
16	2677	
17	2661	
18	2651	
19	2631	
20	2685	

APPENDIX S

VELOCITY TEST      Caliber .30 Rifle, T-25

Date: 17 March 1950

Time Started: 1339

Time Finished: 1400

Chamber Receiver No.: 15

Barrel No.: [REDACTED] Previous Rounds: 6398

Wind Temperature: 70°F

Range Temperature: 48°F      Density: 1.054

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Ball, Caliber .30, T1G4, Lot FA30-1358.

<u>RND NO.</u>	<u>IMPROVED VELOCITY AT 70°, fpc</u>	<u>PRESSURE, psi</u>
1	2726	
2	2714	
3	2709	
4	2683	
5	2680	
6	2711	
7	2687	
8	2714	
9	2716	
10	2714	
11	2714	
12	2684	
13	2711	
14	2698	
15	2687	
16	2682	
17	2698	
18	2741	
19	2665	
20		

COM

APPENDIX S

VELOCITY TEST

Caliber .230 Rifle EM-2

Date: 27 February 1950

Time Started: 1135

Time Finished: 1150

TAI M16A1 Receiver No.: 3

Barrel No.: 3

Previous Rounds: 242

Ammunition Temperature: 70°F

Range Temperature:

Intensity: 1.113

Chronograph Type: Counter

Marker Type: Lumiline

Test Conditions: Subcaliber, M1 Caliber .230, Lot 19A.  
Subcaliber rifle, Caliber .130, EM-2

ROUND NO.	INSTANTANEOUS VELOCITY AT 70°, fms	PRESSURE, psi
1	2231	
2	2320	
3	2375	
4	2208	
5	2242	
6	2201	
7	2214	
8	2171	
9	2179	
10	2214	
11	2173	
12	2200	
13	2210	
14	2207	
15	2222	
16	2180	
17	2214	
18	2176	
19	2197	
20	2211	
21	2190	
22	2246	
23	2186	

Rounds 1-3 = Barriers.

APPENDIX S

VELOCITY TEST

Date: 17 April 1950 Time Started: 1350 Time Finished: 1410

Universal Receiver No.: EM2 No. 3 Barrel No.: EM2 No. 3 Previous Rounds: 1006

Barometric Temperature: +70°F Barometric Pressure: 29.96" Hg Density: 1.038

Chronograph Type: Counter Initiator Type: Lumiline

Test Ammunition: Cartridge, SA, Ball, Caliber .280, Lot 19A.

ROUND NO.	EXTRAMURAL VELOCITY AT 70°, fps	PRESSURE, psi
1	2260	
2	2336	
3	2256	
4	2242	
5	2197	
6	2148	
7	2149	
8	2147	
9	2197	
10	2146	
11	2149	
12	2147	
13	2168	
14	2165	
15	2141	
16	2253	
17	2161	
18	2173	
19	2139	
20	2175	
21	2129	
22	2166	
23	2169	
24	2191	
25	2214	

Rounds 1-5 - Warmers.

APPENDIX S

VELOCITY TEST : Caliber .280 Autocarifle, E.M.2

Date: 17 February 1950 Time Started: 1135 Time Finished: 1200

Carbine Number: 6 Barrel No.: 6 Previous Rounds: 7

Chamber Temperature: 70°F Gauge Temperature: 37°F Velocity: 1,741

Chronograph Type: Counter Initiator: Gunpowder

Cartridge Used: Cartridge, SA, Caliber .280, Lot 1SA.

ROUND NO.	INSTRUMENTAL VELOCITY AT 73°, f.s.	PRESSURE, psi
1	2214	
2	2234	
3	2220	
4	2242	
5	2189	
6	2226	
7	2230	
8	2230	
9	2214	
10	2210	
11	2205	
12	2193	
13	2211	
14	2157	
15	2212	
16	2211	
17	2236	
18	2176	
19	2227	
20	2242	

APPENDIX S

VELOCITY TEST

Caliber .230 Rifle, FM-2

Date: 7 March 1950

Time Started: 0928

Time Finished: 0945

Marked M. Receiver No.: 6

Barrel No.: 6

Previous Rounds: 410

Ammunition Temperature: 76°F

Range Temperature: 76°F

Velocity: 1,103

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, Ball, Caliber .30, Lot 191.

ROUND NO.	INSTANTANEOUS VELOCITY AT 76°, fpm	PRESSURE, psi
1	2198	
2	2205	
3	2235	
4	2250	
5	2261	
6	2201	
7	2215	
8	2232	
9	2163	
10	2212	
11	2203	
12	2219	
13	2224	
14	2193	
15	2198	
16	2225	
17	2168	
18	2163	
19	2415	
20	2203	
21	2214	
22	2150	
23	2196	
24	2177	
25	2203	

Rounds 1-5 - Warmers.

6

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APPENDIX S

~~SECRET~~

VELOCITY TEST Caliber .280 Auto-rifle, E4-2

Date: 17 February 1950 Time Started: 1317 Time Finished: 1444  
Barrel No.: 8 Previous Rounds: 10  
Ambient Temperature: 70°F Gauge Temperature: 59°F Velocity: 1.074  
Chronograph Type: Counter Initiator: ~~Pyro~~ Gunline  
Gun Ammunition: Cartridge, OA, Caliber .280

No.	VELOCITY AND PRESSURE AT 70°, fms	PRESSURE, psi																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	2556																		
2	2491																		
3	2483																		
4	2257																		
5	2615																		
6	2197																		
7	2487																		
8	2253																		
9	2205																		
10	2193																		
11	2210																		
12	2191																		
13	2197																		
14	2230																		
15	2176																		
16	2214																		
17	2189																		
18	2104																		
19	2182																		
20	2162																		

6

6

APPENDIX SVELOCITY TEST Caliber .230, Auto-rifle, M-2

Date: 27 February 1950

Time Started: 1030

Time Finished: 1050

Marksmanship Recorder No.: 6

Barrel No.: 8

Previous Rounds: 1278

Initial Chamber Temperature: 70°F

Barrel Temperature: 23°F

Density: 1.113

Chronograph Type: Counter

Initiator: Lumiline

Ammunition: Cartridges, M1, Caliber .230, Lot 101.

ROUND NO.	TEST CHAMBER VELOCITY AT 73°, fps	PRESSURE, psi
1	2213	
2	2016	
3	2505	
4	2215	
5	2251	
6	2170	
7	2207	
8	2151	
9	2200	
10	2731	
11	2200	
12	2202	
13	2170	
14	2200	
15	2209	
16	2184	
17	2193	
18	2211	
19	2187	
20	2183	
21	2191	
22	2208	
23	2190	

Rounds 1-3 - Warners.

6

~~CONFIDENTIAL~~

APPENDIX 5

6

VELOCITY TEST

Caliber .280, Auto-rifle, EM-2

Date: 17 March 1950

Time Started: 1311

Time Finished: 1331

Transmitter Receiver No.: 8

Barrel No.: 8

Previous Rounds: 6599

Ammunition Temperature: +73°F

Barrel Temperature: +48°F Density: 1.054

Chronograph Type: Counter

Initiator Type: ~~CONFIDENTIAL~~

Test Ammunition: Cartridge, SA, Ball

NUMBER	INITIAL VELOCITY AT 70', fms	PRESSURE, psi
1	2247	
2	2225	
3	2197	
4	2197	
5	2151	
6	2187	
7	2145	
8	2131	
9	2177	
10	2175	
11	2155	
12	2173	
13	2174	
14	2149	
15	2190	
16	2208	
17	2014	
18	2187	
19	2170	
20	2167	

APPENDIX S

VELOCITY TEST

Caliber .250, Auto-rifle, FN

Date: 17 February 1950 Time Started: 1046 Time Finished: 1107

U. M. W. Receiver No.: 6 Barrel No.: ~~2201~~ Previous Rounds: 7

Barrel Temperature: 70°F Bung Temperature: 37°F Density:

Chronograph Type: Counter Initiator Type: Lumiline

Cartridges: Cartridge, R., Caliber .250, Lot 19  
Auto-Rifle, Caliber .250, FN (Long Model)

NUMBER	INSTRUMENTAL VELOCITY AT 70°, FPS	PRESSURE, psi
1	2274	
2	2273	
3	2236	
4	2252	
5	2201	
6	2232	
7	2240	
8	2237	
9	2240	
10	2175	
11	2252	
12	2243	
13	2222	
14	2215	
15	2213	
16	2215	
17	2260	
18	2254	
19	2240	
20	2216	

40

APPENDIX S

VELOCITY TEST Caliber .280, Auto-rifle, FN

Date: 17 March 1950 Time Started: 1245 Time Finished: 1305  
M.G.S.ZAI Receiver No.: 6 Barrel No.: 6 Previous Rounds: 478  
Ambient Temperature: +70°F Range Temperature: +68°F Density: 1.004  
Chronograph Type: Geonor Initiator Type: lumiline  
Test Ammunition: Cartridge, M1, Ball, Caliber .280, Lot No. 19A.

<u>ROUND NO.</u>	<u>DISCHARGE VELOCITY AT 75', fpm</u>	<u>PRESSURE, psi</u>
1	2180	
2	2226	
3	2199	
4	2213	
5	2169	
6	2189	
7	2195	
8	2177	
9	2195	
10	2211	
11	2245	
12	2201	
13	2171	
14	2152	
15	2229	
16	2196	
17	2152	
18	2256	
19	2173	
20	2214	

419

APPENDIX S

VELOCITY TEST

Caliber .280 Auto-rifle, FM

Date: 17 February 1950

Time Started: 1111

Time Finished: 1131

Manufacture Receiver No.: 7

Previous Rounds: 7

Condition Temperature: 60°F

Range Temperature: 37°F

Density:

Chronograph Type: Counter

Initiator Type: Lumiline

Test Ammunition: Cartridge, SA, Caliber .280, Lot 19

No. No. No.

INSTANTANEOUS VELOCITY AT 70', f/s

PRESSURE, psi

1	2245
2	2241
3	2254
4	2244
5	2234
6	2245
7	2244
8	2257
9	2254
10	2242
11	2252
12	2223
13	2226
14	2273
15	2223
16	2259
17	2230
18	2240
19	2232
20	2256

6

APPENDIX S

6

VELOCITY TEST Caliber .260, Auto-rifle, FN

Date: 7 March 1950

Time Started: 0909

Time Finished: 0923

Chamber Receiver No.: 7

Barrel No.: 7  
Bore-Acc. Rounds: 6.60

Ammunition Temperature: 70°F

Barrel Temp.: 54°F Density: 1.103

Cronograph Type: Counter

Initiator Type: Lumilite

First Information: Cartridge, Ball, Caliber .260, Lot 19A.

ROUND NO.	VELOCITY AT 70°, FT	PRESSURE, psi
1	2236	
2	Lost	
3	2258	
4	2206	
5	2233	
6	2196	
7	2186	
8	2175	
9	2190	
10	2197	
11	2241	
12	2205	
13	2198	
14	2193	
15	2191	
16	2198	
17	2227	
18	2194	
19	2197	
20	2250	
21	2162	
22	2194	
23	2160	
24	2210	
25	2197	

Rounds 1-5 - Warmers.

APPENDIX T

Machine Gun Firing Data and Velocities  
(8 sheets)

APPENDIX T

FUNCTION AND VELOCITY FIRING OF AP, BALL, API AND SPOTTING CARTRIDGES

18 April 50                   Temp: 74°                   Density: 1.028

Weapon: Gun, Machine, Caliber .280, M1919A4, No. CW 4966

Barrel No. 3. Previous Rounds: Approximately 5000

<u>TIME</u>	<u>ROUNDS</u>	<u>AMMUNITION</u>	<u>REMARKS</u>
1110	20	Caliber .280, Ball, Lot 19A	Function velocity screens.
1115	20	Caliber .280, Ball, Lot 19A	Function velocity screens.
1125	20	Caliber .280, Ball, Lot 19A	Fired to determine velocity from barrel No. 3. (Penetration barrel)
1310	25	Linked, 4 Ball 1 API	Function - OK. No muzzle flashes or bursts.
1310 1/2 25		Linked, 4 Ball 1 API	Function - OK.
1311	25	Linked, 4 Ball 1 API	Function - OK.
1311 1/2 25		Linked, 4 Ball 1 API	Function - OK.
1312	25	Linked, 4 Ball 1-OBS	1 FF
1312 1/2 25		Linked, 4 Ball 1-CBS	Function - OK.
1313	25	Linked, 4 Ball 1-OBS	Function - OK.
1313 1/2 25		Linked, 4 Ball 1-OBS	1 FF

APPENDIX T

<u>TIME</u>	<u>ROUNDS</u>	<u>AMMUNITION</u>	<u>REMARKS</u>
		Barrel cooled 2 minutes.	
1315 1/2 145	4 Ball, 1 API	Function - OK.	
		Barrel cooled 4 minutes.	
1319 1/2 150	4 Ball, 1 OBS	Function - OK.	
		On above firing no muzzle bursts of either API or OBS cartridge were observed. On several rounds muzzle flashes occurred; however, it was felt this was due to barrel erosion. To corroborate this, one 100 round burst of ball ammunition, Lot 19A was fired through the same barrel.	
1321 1/2 100	Ball, Lot 19A	Function - OK. Serious muzzle flash.	
1450	100	Linked, 4 Ball 1 OBS	Fired from Barrel No. 4. No muzzle bursts or flashes occurred. Function - OK.
		Weapons: Gun, Machine, Caliber .30, M1919A1, No. 39252. Barrel No. 3.	
18 April 1950		Temp: 74°F	
1350	25	Ball, Lot FA- X30-1358	Fired for velocity check of barrel 3. (Penetration)
1352	25	Ball, Lot FA-	Fired for velocity check of barrel 3. (Penetration) X30-1358
1400	25	Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
1400 1/2 25		Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
1401	25	Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.
1401 1/2 25		Linked, 4 AP and 1 API	Function - OK. No muzzle bursts.

APPENDIX T

<u>TIME</u>	<u>ROUNDS</u>	<u>AMMUNITION</u>	<u>REMARKS</u>
1402	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts.
1402 1/2	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts.
1403	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts.
1403 1/2	25	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts
1405 1/2	150	Linked, 4 AP to 1 API	Function - OK. No muzzle bursts
1409 1/2	120	Linked, 4 AP to 1 Spotting	Function - OK. No muzzle bursts

APPENDIX T

MACHINE GUN VELOCITIES

Instrumental velocities at 78' of ball ammunition fired from M1919A4 machine gun barrels used throughout penetration test.

Gun: Machine, caliber .30, M1919A4, No. 39252  
Barrel No. 3. Previous Rounds 6273.

Ammunition Cartridge Ball, caliber .30, T104 Lot No. FA-X30-1358.

Chronograph: Machine Gun Counter

Initiators: Lumiline Screens at 53 and 103 feet from the gun muzzle.

Velocity is given in feet per second

Burst Velocity Data

Date: 18 April 1950                           Barrel No. 3

Burst No. 1 Rounds 6274-6298, 704 rounds per minute.

Velocity: 2720, 2665, 2662, 2684, 2672, 2682, 2653, 2664, 2681, 2687, 2644, 2693, 2682, 2675,  
2716, 2682, 2662, 2670, 2701, 2694, 2667, 2700, 2691, 2706, 2700.

Burst No. 2 rounds 6299-6323, 704 rounds per minute.

Velocity: 2674, 2654, 2675, 2682, 2671, 2738, 2710, 2671, 2704, 2691, 2698, 2685, 2682, 2695,  
2684, 2700, 2700, 2685, 2700, 2701, 2661, 2711, 2682, 2711, 2723.

Gun, machine, caliber .30, M1919A4, No. 39252/  
Barrel No. 3. Previous Rounds 6348.

Ammunition:

Burst No. 1 to 4 Linked 4 AP to 1 API.

Burst No. 5 to 8 Linked 4 AP to 1 Spot.

Burst No. 9         Linked 4 AP to 1 API.

Burst No. 10       Linked 4 AP to 1 Spot.

Cartridge, AP, Caliber .30, T93 FAX30-1357.

Cartridge, API, Caliber .30, T101, FAX30-1355.

Cartridge, Spotting, Caliber .30, T103, Lot No. 2.

Burst No. 1 AP - API, Rounds 6349-6373, 695 rounds per minute.

Velocity: 2701, 2729, 2685, 2671, 2720, 2725, 2690, 2707, 2664, 2710, 2716, 2711, 2700, 2684, 2677,  
2722, 2700, 2701, 2717, 2671, 2672, 2671, 2701, 2690, 2707.

Burst No. 2 AP - API, Rounds 6374-6398, 715 rounds per minute.

Velocity: 2647, 2685, 2762, 2723, 2636, 2713, 2561, 2681, 2710, 2697, 2752, 2746, 2722, 2700, 2710,  
2711, 2738, 2698, 2731, 2701, 2700, 2687, 2738, 2671, 2701.

416

## **APPENDIX T**

Burst No. 3 AP - API, Rounds 6399 to 6423, 724 rounds per minute.

**Velocity:** 2691, 2675, 2684, 2701, 2639, 2672, 2711, 2737, 2726, 2741, 2700, 2716, 2775, 2719,  
2735, 2743, 2723, 2731, 2664, 2731, 2700, 2722, , 2714, , 2711

Burst No. 4 AP - API, Rounds 6424 to 6448, 720 rounds per minute.

**Velocity:** 2729, 2706, 2674, 2734, 2773, 2703, 2725, 2728, 2716, 2714, 2716, 2728, 2737, ,  
2671, 2695, 2687, 2752, 2695, 2734, 2714, 2695, 2719, 2710, 2723.

Burst No. 5 AP - OBS, Rounds 6449 to 6473, 715 rounds per minute.

**Velocity:** 2709,2716,2652,2682,2714,2657,2818,2729,2710,2684,2695,2725,2701,2775,2660,  
2743,2734,2710,2694,2755,2749,2767,2707,2758,2729.

Burst No. 6 AP - OBS, Rounds 6474 to 6498, 722 rounds per minute.

**Velocity:** 2684,2779,2731,2614,2707,2682,2717,2750,2747,2803,2716,2770,2781,2740,2701,  
2749,2722,2728,2773,2719,2701,2746,2776,2767,2773.

Burst No. 7 AP - OBS, Rounds 6499 to 6523, 715 rounds per minute.

**Velocity:** 2701,2704,2734,2737,2729,2750,2759,2779,2749,2807,2725,2792,2782,2749,2746,  
2716,2784,2795,2759,2740,2722,2790,2807,2744,2764.

Burst No. 8 AP - OBS, Rounds 6524 to 6548, 725 rounds per minute.

**Velocity:** 2693, 2744, 2762, 2786, 2759, 2668, 2703, 2786, 2767, 2753, 2716, 2731, 2765, 2725, 2747,  
2681, 2726, 2731, 2806, 2761, 2671, 2743, 2758, 2792, 2722.

Burst No. 9 AP - API, Rounds 6549 to 6698, 720 rounds per minute.

**Velocity:** 2795, 2731, 2713, 2756, 2734, 2713, 2779, 2722, 2740, 2731, 2759, 2770, 2801, 2734, 2728,  
2701, 2713, 2735, 2728, 2745, 2761, 2778, 2726, 2759, 2746, 2701, 2720, 2789, 2782, 2750,  
2713, 2752, 2779, 2719, 2719, 2737, 2731, 2729, 2764, 2737, 2743, 2731, 2749, 2740, 2764,  
2740, 2675, 2795, 2729, 2776, 2734, 2719, 2764, 2761, 2725, 2749, 2743, 2749, 2792, 2728,  
2728, 2746, 2776, 2756, 2770, 2731, 2764, 2749, 2752, 2806, 2773, 2710, 2764, 2767, 2734,  
2728, 2767, 2770, 2722, 2767, 2823, 2725, 2728, 2713, 2798, 2719, 2707, 2728, 2725, 2761,  
2737, 2725, 2773, 2755, 2734, 2782, 2746, 2765, 2737, 2725, 2789, 2764, 2776, 2773, 2773,  
2761, 2740, 2792, 2779, 2719, 2743, 2770, 2773, 2775, 2820, 2789, 2731, 2731, 2764, 2737,  
2710, 2776, 2738, 2722, 2770, 2707, 2770, 2704, 2782, 2795, 2752, 2752, 2773, 2782, 2743,  
2755, 2737, 2798, 2761, 2731, 2795, 2710, 2725, 2744, 2801, 2737, 2764, 2786, 2758, 2746,  
2789

APPENDIX T

Burst No. 10 AP - OBS, Rounds 6699 to 6815, 750 rounds per minute.

Velocity: 2744, 2795, 2759, 2728, 2726, 2707, 2729, 2775, 2729, 2752, 2653, 2790, 2775, 2697,  
2779, 2687, 2755, 2765, 2767, 2790, 2700, 2772, 2784, 2804, 2752, 2599, 2758, 2789,  
2749, 2761, 2723, 2759, 2786, 2761, 2719, 2684, 2786, 2767, 2779, 2786, 2695, 2606,  
2830, 2767, 2786, 2719, 2820, 2755, 2758, 2770, 2725, 2770, 2764, 2795, 2820, 2598,  
2782, 2767, 2770, 2770, 2678, 2776, 2710, 2807, 2764, 2720, 2758, 2755, 2725, 2740,  
2672, 2820, 2731, 2749, 2779, 2693, 2740, 2775, 2743, 2807, 2639, 2782, 2814, 2770,  
2746, 2630, 2786, 2773, 2776, 2758, 2759, 2800, 2764, 2776, 2792, 2687, 2764, 2789,  
2773, 2789, 2573, 2804, 2776, 2844, 2795, 2678, 2734, 2798, 2807, 2767, 2728, 2782,  
2807, 2767, 2770, , , , , ,

Gun, machine, caliber .280, M1919A4, No. CW 4966.

Barrel No. 3. Previous Rounds: 6748.

Ammunition, Cartridge, SA Ball, caliber .280, Lot No. 19A

Chronograph: Machine Gun Counter.

Initiation: Lumiline Screens placed 53 and 103 feet from the gun muzzle.

Velocity is given in feet per second.

6749 to

Burst No. 1, Rounds 6768 , 850 rounds per minute.

Velocity: 2126, 2170, 2159, 2162, 2127, 2143, 2193, 2156, 2219, 2142, 2170, 2168, 2206, Lost,  
2181, 2179, 2167, 2163, 2162, 2186.

The following velocities were recorded on a counter-chronograph initiated by  
lumiline screens at 53 and 103 feet from the gun muzzle.

Gun, machine, caliber .280, M1919A4 No. CW 4966

Barrel No. 3. Previous Rounds: 6768.

Ammunition:

Burst 1 to 4 Linked, 4 Ball to 1 API.

Burst 5 to 8 Linked, 4 Ball to 1 OBS.

Burst 9 Linked, 4 Ball to 1 API.

Burst 10 Linked, 4 Ball to 1 OBS.

Burst 11 All ball

Cartridge, SA, Ball, Caliber .280, Lot 19A.

Cartridge, SA, API, Caliber .280, Lot 23A.

Cartridge, SA, OBS, Caliber .280, Lot 17A.

Burst No. 1, Rounds 6769 to 6793, 810 rounds per minute.

Velocity: 2190, 2136, 2249, 2163, 2182, 2233, 2196, 2169, 2143, 2165, 2245, 2131, 2155, 2185, 2182,  
2272, 2229, 2154, 2230, 2182, , 2158, 2181, 2184, 2174.

## APPENDIX T

Burst No. 2, Rounds 6794 to 6818, 814 rounds per minute.

**Velocity:** 2210,2171,2141, ,2182,2239,2201,2182,2175,2189,2260,2180,2156,2166,  
2190,2270,2230,2219,2129,2213,2268,2201,2173,2225, .

Burst No. 3, Rounds 6819 to 6843, 842 rounds per minute.

**Velocity:** 2202, 2190, 2251, 2172, , , , 2214, 2197, 2194, 2269, 2215, 2176, 2225,  
2226, 2299, 2290, 2239, 2199, , , 2197, , 2249,

burst No. 4, Rounds 6844 to 6868,

**Velocity:** 2281, 2220, , 2198, 2233, , 2227, , , 2302,  
2204, 2251, 2280, , . , 2220, , 2244, 2224, 2305, 2259.

Burst No. 5, Rounds 6869 to 6893, 869 rounds per minute.

**Velocity:** 1764, 2195, 2256, , , , 2229, , 2256, 1856, 2285,  
, 2237, 2067, 2302, 2285, 2245, 2282, 2278, 2260, , , ,

Burst No. 6, Rounds 6894 to 6918, 816 rounds per minute.

**Velocity:** 2180,2307,2277,2215,2257, ,2263,2218,2238, ,1978,2237,2247,2245,  
2215, ,2256,2245,2213,2260,1889,2219,2272,2268, .

Burst No. 7, Rounds 6919 to 6943, 848 rounds per minute.

**Velocity:** 2197, 2291, 2288, 2278, 2269, 1930, 2279, 2276, 2277, 2276, , 2253, 2247, 2297,  
2260, 1914, 2336, 2276, 2240, 2323, , , 2263, 2272, 2307.

Burst No. 8, Rounds 6944 to 6968, 857 rounds per minute.

**Velocity:** 2293, 2282, 2260, 2270, 2288, 2288, 2239, 1759, 2275, 2246, 2253, 2303,  
1885, 2294, 2327, 2320, 2307, 1757, 2295, 2261, 2255.

Burst No. 9, Rounds 6969 to 7113, 893 rounds per minute.

Velocity: .2321,2311,2296,2212,2334,2264,2300, .2350,2321,2287,2271,2307,  
2296,2317,2342,2325,2293,2367,2322,2270,2299, .2290,2317,2286,2301,  
2278,2286,2322,2293,2262,2281, .2320,2304,2333,2299,2290,2331,2268,  
2353,2282,2320,2311,2286,2320,2299,2235,2351,2362,2272,2360,2268,2327,  
2284,2288,2247,2291,2325,2364,2323,2366,2305,2320,2293,2316, .2290,  
2353, .2274,2303, .2284,2305,2307,2297,2353,2301,2300,2325,  
2278,2331,2303, .2320,2309,2351,2325,2312,2351,2320,2310,2288,2293,  
2293,2305,2355,2314, .2290,2333,2357,2333,2316,2342,2319  
.2320,2284, .2320,2314, .2312,2286,2307,2314,2314,2314  
.2280,2340, .2316,2307, .2312,2286,2307,2314,2314,2314  
.2331,2303,2314, .2312,2286,2307,2314,2314,2314

APPENDIX T

Burst No. 10, Rounds 714 to 7263, 871 rounds per minute.

Velocity: , 2317, 2269, 1776, 2285, 2333, 2281, 2344, , 2303,  
2285, , 1722, , 2305, 2329, , 2272, 2320, 2308, 2305, 1746,  
2312, , , 1764, , 2281, , 2314, 1777, 2260, 2276, 2342,  
2318, 2326, 2301, 1758, 2327, 2342, 2351, 2322, 1789, 2282, 2305, 2314, 2275,  
1818, 2281, 2338, 2320, 2316, , 2321, 2325, 2312, , 2280, 2305,  
2314, , 2342, , 2318, 2318, 2274, 1761, 2325,  
2364, 2335, 2335, 1740, 2312, 2331, 2310, 2312, 2340, 2288, 2312, 2316, 2305,  
1825, 2293, 2307, 2295, 2307, 1818, 2325, 2288, 2316, 2290, 1797, 2268, 2320,  
2355, 2301, , 2325, 2322, 2290, 2319, 1872, 2371, 2335, 2316, 2379,  
2308, 2342, 2314, 2327, , 2327, 2286, 2325, 2278, , , 2307, 2325,  
2327, 1798, 2287, 2301, 2295, 2270, .

Burst No. 11, Rounds 7264 to 7363, 871 rounds per minute.

Velocity: 2302, 2331, , 2301, 2322, 2307, 2293, , 2257, , 2296, 2311,  
2296, 2306, 2296, 2299, 2342, 2286, 2306, 2291, 2322, 2307, 2308, 2316, 2271,  
2312, 2335, 2286, 2309, 2327, 2307, 2312, 2307, 2297, 2291, 2295, 2307, 2285,  
2293, 2353, 2318, 2304, 2268, 2320, 2295, 2353, 2314, 2316, 2295, 2320, 2307,  
2221, 2274, 2293, 2303, 2259, 2230, , 2235, , 2315, 2305, 2259,  
2209, , 2268, 2156, 2259, 2206, 2237, 2274, , 2225, 2167, ,  
2235, 2249, , 2145, 2139, 2134, 2227, 2141, 2037, , 2209, 2156,  
2187, 2147, , , 2053, 2093, 2091, , 2112.

Burst No. 12, Rounds 7364 to 7463 . 816 rounds per minute.

Velocity: 2369, 2281, 2273, 2257, , 2334, , 2267, , , 2362, ,  
2267, 2215, , 2208, , , 2272, , , 2221,  
2380, , 2225, 2240, 2255, 2327, 2256, 2256, 2243, 2250, 2240, 2335,  
2272, 2211, 2349, 2261, , , 2245, 2353, 2253, 2240, 2297, 2307, 2357,  
2278, 2290, 2360, 2278, 2384, 2278, 2274, 2290, 2266, 2307, 2263, 2255, 2244,  
2280, 2333, 2260, 2244, 2223, 2330, , 2245, 2216, 2213, , 2256, 2259,  
2302, 2293, 2335, 2309, 2271, 2260, 2242, 2357, 2286, 2266, 2260, 2288, 2331,  
2239, 2293 , 2255, 2335, 2275, 2255, , 2259.

APPENDIX U

Ballistic Data

(7 sheets and cover sheet)

CONFIDENTIAL

COMPARISON OF  
U. K. CALIBER 0.28 AMMUNITION  
AND  
U. S. CALIBER 0.30 AMMUNITION

The tabulated form factors are from vertical target time of flight firings at 600 and 1000 yards range conducted at Aberdeen Proving Ground, Maryland during 31 March and 3 April 1950.

The tabulated ballistic data are computed by the Siacci Method, employing (1) the form factors derived from the vertical target firings and (2) projectile weights and instrumental velocities derived from random samples of the ammunition lots fired.

The designations of the ammunition fired and the ballistic coefficients of each type are:

Type	U. K. Caliber 0.28	$C_5$	U. S. Caliber 0.30	$C_5$
Ball	Lot 19A	.256	T104, Lot FAX 30-1358	.213
AP	Lot 24A	.232	T93, Lot FAX 30-1357	.212
API	Lot 23A	.240	T101, Lot FAX 30-1356	.222
Tracer	Lot 32A	.309	T102, Lot FAX 30-1359	.262
Observing	Lot 17A	.242	T103, Lot 2	.184

Ballistic Research Laboratories  
Computing Laboratory  
Firing Table Branch  
Aberdeen Proving Ground, Maryland  
May 1950

445

**CONFIDENTIAL**

**Cartridge Ball**

Range yds	Cal. .28	Cal. .30
	Elev. "	Elev. "
0	0.0	0.0
200	2.1	1.4
400	4.8	3.3
600	6.5	5.9
800	13.4	9.7
1000	19.7	15.1
1200	27.4	22.0
1400	36.4	30.5
1600	46.6	40.5
1800	58.2	52.1
2000	71.2	65.4

Special water impact firings, conducted on 28 April and 4 May 1950, indicate that the maximum range of each of the two types of Ball Ammunition is approximately 3000 yards at approximately 25° elevation.

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Caliber .28  
Cartridge - Ball  
 $i_5 = .995$  Wt. = 139.6 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2328	1681	0.00	0.0
26	2273	1603	0.03	0.0
100	2120	1394	0.14	0.1
200	1920	1144	0.29	0.3
300	1732	931	0.45	0.8
400	1559	754	0.63	1.6
500	1403	611	0.83	2.8
600	1264	496	1.06	4.6
800	1065	352	1.58	10.2
1000	972	293	2.17	19.1
1500	812	205	3.87	60.9
2000	679	143	5.90	141.0

Caliber .30  
Cartridge - Ball  
 $i_5 = 1.022$  Wt. = 136.8 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2843	2457	0.00	0.0
26	2771	2334	0.03	0.0
100	2572	2011	0.11	0.0
200	2314	1628	0.23	0.2
300	2066	1298	0.37	0.6
400	1830	1018	0.53	1.1
500	1613	791	0.70	2.0
600	1420	613	0.90	3.3
800	1117	384	1.38	7.7
1000	984	261	1.95	15.4
1500	721	150	3.66	54.3
2000	617	121	5.66	145.8

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Caliber .28

Cartridge - AP

$I_5 = 1.010$  Wt. = 126.4 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2262	1460	0.00	0.0
26	2202	1384	0.04	0.0
100	2036	1183	0.14	0.1
200	1821	946	0.30	0.4
300	1622	751	0.47	0.9
400	1443	594	0.67	1.8
500	1286	472	0.89	3.2
600	1153	379	1.14	5.3
800	1007	289	1.70	11.7
1000	924	244	2.32	21.8
1500	760	164	4.12	68.7
2000	621	110	6.30	160.7

Caliber .30

Cartridge - AP

$I_5 = 1.020$  Wt. = 136.1 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2896	2535	0.00	0.0
26	2822	2408	0.03	0.0
100	2621	2077	0.10	0.0
200	2358	1681	0.23	0.2
300	2107	1342	0.36	0.5
400	1868	1055	0.52	1.1
500	1647	820	0.69	1.9
600	1449	635	0.88	3.1
800	1134	389	1.35	7.4
1000	991	297	1.92	14.9
1500	796	192	3.62	53.1
2000	640	124	5.72	132.5

425

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Caliber .28  
Cartridge - API

$i_5 = .988$  Wt. = 130.2 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2253	1469	0.00	0.0
26	2196	1396	0.04	0.0
100	2036	1200	0.14	0.1
200	1828	967	0.30	0.4
300	1635	774	0.47	0.9
400	1460	617	0.66	1.8
500	1306	494	0.88	3.1
600	1174	399	1.12	5.1
800	1019	301	1.68	11.4
1000	935	253	2.30	21.4
1500	775	174	4.05	66.5
2000	638	118	6.20	155.7

Caliber .30  
Cartridge - API

$i_5 = .981$  Wt. = 137.5 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2808	2409	0.00	0.0
26	2739	2292	0.03	0.0
100	2551	1989	0.11	0.0
200	2304	1622	0.24	0.2
300	2067	1306	0.37	0.6
400	1841	1036	0.53	1.1
500	1632	814	0.70	2.0
600	1445	638	0.90	3.3
800	1144	400	1.37	7.6
1000	1000	306	1.93	15.1
1500	810	201	3.60	52.5
2000	659	133	5.66	129.7

426

CONFIDENTIAL

Caliber .28  
 Cartridge - Tracer  
 $i_5 = .679$  Wt. = 115.2 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2293	1345	0.00	0.0
26	2248	1293	0.03	0.0
100	2122	1152	0.14	0.1
200	1956	979	0.28	0.3
300	1797	826	0.44	0.8
400	1648	695	0.62	1.6
500	1509	583	0.81	2.7
600	1383	489	1.02	4.2
800	1169	350	1.49	9.0
1000	1040	277	2.04	16.9
1500	885	201	3.61	52.8
2000	764	149	5.44	119.9

Caliber .30  
 Cartridge - Tracer  
 $i_5 = .814$  Wt. = 134.1 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2685	2148	0.00	0.0
26	2629	2059	0.03	0.0
100	2471	1819	0.12	0.1
200	2264	1527	0.24	0.2
300	2063	1268	0.38	0.5
400	1870	1042	0.53	1.1
500	1689	850	0.70	2.0
600	1523	691	0.89	3.2
800	1242	460	1.33	7.2
1000	1057	333	1.86	14.0
1500	871	226	3.43	47.7
2000	732	160	5.31	114.2

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Caliber .28  
 Cartridge - Observing  
 $i_5 = .962$  Wt. = 127.5 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2398	1629	0.00	0.0
26	2340	1551	0.03	0.0
100	2177	1343	0.13	0.1
200	1963	1092	0.28	0.3
300	1761	879	0.44	0.8
400	1575	703	0.62	1.6
500	1408	562	0.82	2.8
600	1262	451	1.05	4.5
800	1057	317	1.57	10.0
1000	963	263	2.17	19.1
1500	796	180	3.89	61.2
2000	658	123	5.96	143.9

Caliber .30  
 Cartridge - Observing  
 $i_5 = 1.033$  Wt. = 119.7 grains

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Time of Flight secs	Maximum Ordinate feet
0	2809	2097	0.00	0.0
26	2726	1975	0.03	0.0
100	2498	1658	0.11	0.1
200	2204	1291	0.24	0.2
300	1924	984	0.38	0.6
400	1665	737	0.55	1.2
500	1437	549	0.75	2.3
600	1244	411	0.97	3.8
800	1016	274	1.52	9.3
1000	911	221	2.14	18.5
1500	712	135	4.01	65.1
2000	549	80	6.41	264.1

**CONFIDENTIAL**

**REMAINING VELOCITY AND STRIKING ENERGY  
FOR REDUCED INSTRUMENTAL VELOCITY**

**Caliber .28 Ball  
2195 f/s @78'**

**Caliber .30 Ball  
2689 f/s @78'**

Range yds	Remaining Velocity f/s	Striking Energy ft.lbs.	Remaining Velocity f/s	Striking Energy ft.lbs.
600	1217	460	1367	568
1000	958	285	970	286

APPENDIX V

Data taken During the Time of  
Flight and Maximum Range Firing

(16 Pages)

APPENDIX V

WEATHER DATA

Temperature readings given were recorded at the range at the times indicated. Relative atmospheric densities were calculated for these temperatures using pressure and humidity data recorded by the Meteorological Measurements Unit, Development and Proof Services.

<u>DATE</u>	<u>TIME</u>	<u>ATMOSPHERIC TEMPERATURE</u>	<u>RELATIVE ATMOSPHERIC DENSITY</u>
31 March 50	1356	54	1.036
	1420	52	1.041
	1435	53	1.037
	1459	49	1.048
	1513	50	1.046
	1543	50	1.046
3 April 50	1002	59	1.016
	1041	60	1.014
	1109	64	1.004
	1128	63	1.006
	1138	64	1.004
	1505 to 1627	65	1.001

TIME OF FLIGHT TEST

Barrels:

(U.S.) Mann barrel No. 5 (with receiver No. 1528613) previously fired 407 rounds.

(U.K.) Mann barrel No. 450/3, previously fired 545 rounds.

Ammunition:

(U.S.) Cartridge, ball, caliber .30, T104, Lot No. FAX30-1358  
Cartridge, AP, caliber .30, T93, Lot No. FAX30-1357.  
Cartridge, API, caliber .30, T101, Lot No. FAX30-1356.  
Cartridge, Tracer, caliber .30, T102, Lot No. FAX30-1359.  
Cartridge, Observing, caliber .30, T103, Lot No. 2.

(U.K.) Cartridge, ball, caliber .280, Lot No. 19A.  
Cartridge, AP, caliber .280 Lot No. 24A.  
Cartridge, API, caliber .280, Lot No. 25A.  
Cartridge, Tracer, caliber .280, Lot No. 32A.  
Cartridge, Observing, caliber .280, Lot No. 17A.

Screen Distances:

Gun muzzle to 1st velocity screen: 26 feet.

Gun muzzle to 2nd velocity screen: 128 feet.

Gun muzzle to Time-of-Flight screen: 600 yards and 1000 yards.

Asimuth of Fires: 14° clockwise from south.

## APPENDIX V

TIME-OF-FLIGHT SCREEN AT 600 YARDS

DATE: 31 March 1950

Cartridge, ball, caliber .280, Lot No. 19A

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78'fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
1356	3	Lost	Lost	2352	1.02503	
1358	4	14	WNW	2343	1.01659	
1358½	5	12	WNW	2342	1.02588	
1359	6	11	NW	Lost	.99924	
1359½	7	12	NW	2339	1.01724	
1400	8	10	WNW	Lost	1.00267	
1401	9	5	SW	Lost	1.02631	
1406	10	4	W	2303	1.04385	
1406½	11	3	NW	2308	1.03973	
1407	12	1	WNW	2324	1.03938	
1409	13	9	NW	2300	1.05812	
1409½	14	7	NW	2316	1.03829	
1410	15	11	W	2329	1.04113	
1411	16	10	WNW	2358	1.01807	
1411½	17	9	W	2387	.99907	
1412	18	15	WNW	2363	1.00415	
1412½	19	8	WNW	2355	1.02174	
1413	20	11	NW	2360	1.00664	
1414	21	9	WNW	2344	1.02854	
1414½	22	8	WNW	2341	1.02869	
1415	23	10	WNW	2362	1.00815	
1416	24	9	NW	2354	1.01998	
1417	25	9	N	2370	1.00133	
1417½	26	8	WNW	2350	1.00261	
1418	27	11	NW	2358	1.00764	
1418½	28	5	NW	2362	1.02733	
1419	29	7	NW	2327	1.03979	
1420	30	8	NW	2366	1.01073	
1420½	31	6	NW	2360	1.02292	Temp. 52°F

Cartridge, ball, caliber .30, T104, Lot FAX30-1358

1010						Locators
1423	32	10	W	2772	Lost	Missed time-of-flight screen. Temp. 52°F
1424	33	5	W	2812	.87309	
1424½	34	11	WNW	2813	.88287	
1425	35	10	WNW	2828	.87350	
1425½	36	7	NW	2830	.87073	
1426	37	9	WNW	2811	.87143	
1426½	38	9	W	2777	.88447	
1427	39	6	WNW	2754	.89886	
1427½	40	5	N	2772	.88938	
1428	41	6	WNW	2774	.89009	

432

## APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78'fps	TIME OF FLIGHT sec	
1429	42	2	NW	2794	.87998	
1429½	43	1	NW	2795	.88773	
1430	44	0	--	2778	.88732	
1430½	45	1	NW	2779	.88888	
1431	46	2	NW	2838	.87243	
1431½	47	6	NNW	2800	.88241	
1432	48	4	NNW	2753	.89851	
1432½	49	6	NNW	2820	.87369	
1433	50	4	NNW	2812	Lost	Lost time-of-flight.
1433½	51	4	NNW	2763	.89849	
1434	52	5	NNW	2792	.88153	
1434½	53	3	NW	2748	.90428	
1435	54	2	NNW	2765	.89206	Temp. 53°F

Cartridge, AP, Caliber .280, Lot 24A

1459	55	4	SW	2275	1.08453	Temp. 49°F
1459½	56	3	SW	2273	1.09286	
1500	57	1	NW	2311	1.06512	
1500½	58	9	NW	Lost	1.06516	Velocity lost.
1501	59	10	NNW	2313	1.06284	
1501½	60	3	NW	2329	1.05460	
1502	61	0	--	2315	1.06232	
1502½	62	0	--	Lost	1.07673	
1503	63	0	--	2321	1.06270	
1503½	64	0	--	2315	1.06639	
1504	65	0	--	Lost	1.07021	Velocity lost.
1504½	66	0	--	Lost	1.05949	Velocity lost.
1507	67	15	S	2275	1.08110	
1507½	68	13	NE	2239	1.11207	
1508	69	12	S	2307	1.06890	
1508½	70	8	S	2301	1.06768	
1509	71	4	NNE	2297	1.07551	
1509½	72	7	NNE	2317	1.05199	
1510	73	10	S	2298	1.08474	
1510½	74	7	NNE	2262	1.08992	
1511	75	7	S	2300	1.06967	
1511½	76	7	NW	2293	1.07431	
1512	77	6	NW	2306	1.06313	
1512½	78	4	NNW	2308	1.06677	
1513	79	6	S	2322	1.05867	Temp. 50°F

APPENDIX V

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78° fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
<u>Cartridge, AP, Caliber .30, T93, Lot FAX30-1357</u>						
1514	80	5	NNE	2745	Lost	Time-of-flight lost Temp. 50°F
1517	81	0	--	2853	Lost	Time-of-flight lost
1517½	82	0	--	2789	Lost	Time-of-flight lost
1519	83	3	NNW	2838	Lost	Time-of-flight lost
1521	84	4	N	2817	Lost	Time-of-flight lost
1525	85	11	NE	2760	.90624	
1525½	86	4	NE	2826	.87967	
1536	87	6	NNW	2873	.86662	
1536½	88	5	W	2819	.88530	
1537	89	8	NNW	2846	.87184	
1537½	90	10	NE	2803	.88935	
1538	91	7	W	2833	.87549	
1538½	92	9	NNW	2812	.88268	
1539	93	4	NNW	2838	.86796	
1539½	94	3	NNW	2808	.88035	
1540	95	4	NNW	2844	.87135	
1540½	96	6	SW	2798	.88286	Temp. 50°F
1540½	97	8	WSW	2850	.86527	
1540½	98	10	W	2812	.88054	
1541	99	10	W	2818	.88174	
1541½	100	7	WSW	2844	.87385	
1542	101	6	W	2802	.88966	
1542½	102	7	W	2818	.88143	
1543	103	5	W	2810	.88775	
1543½	104	6	NNW	2808	.88044	Temp. 50°F

DATE: 3 April 1950 Cartridge, API, Caliber .30, T101, Lot FAX30-1356

1002	105	11	SSB	2748	.89332	Temp. 59°F
1003	106	10	S	2775	.88289	
1003½	107	10	SSW	2775	.87891	
1004	108	13	W	2765	.88086	
1004½	109	11	SSW	2787	.87649	
1005	110	11	SSW	2782	.98302	
1005½	111	10	SSW	2799	.87338	
1006	112	9	SW	2793	.88169	
1006½	113	9	S	2783	.87876	
1007	114	10	S	2779	.87617	
1007½	115	14	S	2795	.87018	
1007½	116	11	S	2783	.87698	
1008	117	14	S	2774	.87507	
1008½	118	11	S	2786	.87648	
1008½	119	11	S	2800	.87155	
1009	120	12	SSW	2766	.88057	
1009½	121	12	SSW	2764	.88040	

434

## APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78° fpm	TIME OF FLIGHT sec	REMARKS
1010	122	9	SW	2775	.87823	
1010 $\frac{1}{2}$	123	9	SSW	2742	.89057	
1010 $\frac{3}{4}$	124	10	SW	2766	.87830	Temp. 58-1/2°F

Cartridge, APT, Caliber .280, Lot 23A

1015	125	7	SW	2268	1.05640	Temp. 58-1/2°F
1015 $\frac{1}{2}$	126	8	S	2294	1.04459	
1016	127	8	S	2289	1.05517	
1016 $\frac{1}{4}$	128	10	SSW	2306	1.04535	
1016 $\frac{1}{2}$	129	11	S	2261	1.07065	
1017	130	10	SSW	2276	1.06132	
1017 $\frac{1}{2}$	131	11	S	2278	1.06094	
1018	132	9	SW	2246	1.07385	
1018 $\frac{1}{2}$	133	7	S	2284	1.05602	
1020	134	7	S	2279	1.05892	
1020 $\frac{1}{4}$	135	10	SSW	2296	1.05909	
1020 $\frac{1}{2}$	136	9	SSW	2258	1.06874	
1021	137	6	S	2247	1.08001	
1021 $\frac{1}{4}$	138	9	SW	2253	1.07283	
1021 $\frac{1}{2}$	139	11	SSW	2244	1.07701	
1022	140	12	SSW	2277	1.06183	
1022 $\frac{1}{4}$	141	10	SSW	2254	1.06906	
1023	142	8	SW	2215	1.08632	
1023 $\frac{1}{4}$	143	9	SW	2247	1.07278	
1024	144	10	S	2253	1.06609	Temp. 58-1/2°F

Cartridge, Tracer, Caliber .30, T102, Lot PAX30-1359

1023	145	5	SSW	2595	.89837	Temp. 58-1/2°F
1028 $\frac{1}{4}$	146	10	SW	2600	.89724	
1029	147	8	S	2642	.87259	
1029 $\frac{1}{4}$	148	8	S	2622	.88192	
1030	149	9	S	2661	.87476	
1030 $\frac{1}{4}$	150	10	SSW	2603	.89308	
1030 $\frac{1}{2}$	151	8	SSW	2630	.88165	
1031	152	10	SSW	2654	.87636	
1031 $\frac{1}{4}$	153	12	SSW	2651	.87312	
1031 $\frac{1}{2}$	154	9	SSW	2660	.86817	
1032	155	9	SW	2660	.89179	
1032 $\frac{1}{4}$	156	11	SSW	2695	.85163	
1032 $\frac{1}{2}$	157	8	SSW	2617	.89072	

435

APPENDIX V

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78° fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
1033	158	6	SSW	2655	.86998	
1033½	159	6	SW	2655	.87769	
1034	160	10	SW	2601	.89085	
1034½	161	15	SW	2614	.88870	
1035	162	11	SSW	2680	.86948	
1035½	163	10	SSW	2663	.86393	
1036	164	11	SW	2639	.87967	
1037	165	8	SW	2616	.88682	Temp. 60°F

Cartridge, Tracer, Caliber .280, Lot 32A

1041	166	9	SW	2260	1.00940	Temp. 60°F
1041½	167	11	SW	2244	1.01342	
1042	168	9	SW	2239	1.02417	
1042½	169	10	SW	2271	1.00338	
1043	170	7	SW	2265	.99923	
1043½	171	10	SW	2215	1.02527	
1044	172	11	SSW	2260	.99863	
1044½	173	10	SSW	2270	1.00998	
1044¾	174	11	SSW	2275	.99599	
1045	175	9	SSW	2260	1.01935	
1045½	176	6	SW	2302	.99118	
1045¾	177	5	SW	Lost	.99437	Velocity lost
1047	178	7	SW	2312	.98166	
1047½	179	8	WSW	2274	1.00590	
1048	180	7	SSW	2261	1.00453	
1048½	181	6	SSW	2274	1.00245	
1049	182	6	SW	2277	1.00322	
1049½	183	10	SSW	2258	1.01364	
1049¾	184	8	WSW	2290	1.00061	
1050	185	8	SW	2273	.99750	
1050½	186	10	SW	2270	1.01591	Temp. 60°F

Cartridge, Observing, Caliber .30, T103, Lot 2

1055	187	7	SW	2750	.96338	Temp. 60°F
1055½	188	9	SSW	2782	.94706	
1056	189	10	SSW	2799	.97400	
1056½	190	9	SW	2752	.95087	
1056¾	191	11	SSW	2761	.93963	
1057	192	13	SSW	2768	.94956	
1057½	193	10	SW	2757	.95093	
1058	194	11	S	2794	.94084	
1058½	195	10	SW	2765	.95948	
1058¾	196	7	SW	2750	.93061	

APPENDIX V

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78° fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
1059	197	8	SW	2817	.90575	
1059½	198	11	SW	2773	.93486	
1100	199	11	SW	2814	.92882	
1100½	200	12	SSW	2784	.93781	
1100½	201	10	SW	2750	.94917	
1101	202	10	SW	2756	.94008	
1101½	203	10	SW	2786	.93832	
1102	204	10	SSW	2802	.92667	
1103	205	7	SW	2806	.92369	
1103½	206	6	SW	2781	.92982	Temp. 59°F

Cartridge, Observing, Caliber .280, Lot 17A

1108	207	4	SW	2384	1.02209	Temp. 59°F
1108½	208	5	SSW	2394	1.00753	
1108¾	209	5	SW	2399	1.00507	
1109	210	4	SSW	2420	.99180	
1109½	211	7	SSW	2391	1.00685	
1109¾	212	5	SSW	2400	1.00278	
1110	213	8	SW	2397	1.00694	
1110½	214	10	SSW	2370	1.01542	
1111	215	10	SW	2400	1.01664	
1112	216	5	SW	2355	1.02901	
1112½	217	7	SW	2392	1.00690	
1113	218	9	SW	2370	1.01660	
1113½	219	6	SW	2394	1.01587	
1114	220	5	SW	2390	1.01076	
1114½	221	7	SSW	2391	1.01263	
1114¾	222	8	SSW	2069	Lost	Muzzle burst
1116	223	5	S	2413	1.00958	
1116½	224	5	SW	2430	.98384	
1117	225	4	SW	2322	Lost	Muzzle burst
1117½	226	5	SW	2414	.99898	
1118	227	7	SSW	2387	1.01214	
1118½	228	6	SSW	2432	.99417	Temp. 59°F

## APPENDIX V

TIME-OF-FLIGHT SCREEN AT 1000 YARDS

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78' fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
<u>Cartridge, Tracer, Caliber .30, Lot FAX30-1359</u>						
1409	1	2	N	2634	1.84595	Temp. 64°F
1409½	2	2	N	2641	1.85509	
1410	3	1	N	2625	1.84079	
1410½	4	3	N	2627	1.84472	
1411	5	1	N	2590	1.90962	
1411½	6	2	N	2650	1.84939	
1411¾	7	4	N	Lost	1.83411	Velocity lost
1412	8	0	-	2606	1.88085	
1412½	9	0	-	2599	1.87208	
1412¾	10	0	-	2694	1.80228	
1413	11	1	N	2644	1.84130	
1413½	12	0	-	2607	1.86861	
1413¾	13	0	-	2649	1.83165	
1414	14	0	-	2620	1.85288	
1414½	15	0	-	2639	1.83598	
1414¾	16	0	-	2621	1.84348	
1415	17	0	-	2620	1.86330	
1415½	18	0	-	2604	1.87951	
1416	19	0	-	2610	1.81929	
1416½	20	0	-	2639	1.83977	
1417	21	0	-	2688	1.82685	Temp. 64°F

Cartridge, Tracer, Caliber .280, Lot 32A

1420	22	2	ESE	2264	2.02316	Temp. 64°F
1420½	23	3	N	2275	2.00713	
1421	24	0	-	2280	2.01349	
1421½	25	0	-	2305	1.99383	
1422	26	0	-	2285	1.99646	
1423	27	0	-	2284	1.97819	
1423½	28	0	-	2286	1.98138	
1424	29	0	-	2320	1.97882	
1424½	30	0	-	2298	1.96905	
1424¾	31	2	N	2283	1.98624	
1425	32	3	N	2271	1.98447	
1425½	33	2	N	2274	2.00558	
1425¾	34	2	N	2308	1.97377	
1425¼	35	1	N	2280	1.98612	
1426	36	0	-	2279	2.00475	
1426½	37	0	-	2269	1.99988	
1426¾	38	0	-	2313	1.97231	
1427	39	0	-	2258	2.00684	
1427½	40	0	-	2294	1.97352	
1428	41	0	-	2345	1.93109	Temp. 63°F

438

## APPENDIX V

<u>TIME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78' f/s</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
<u>Cartridge, Ball, Caliber .30, T104, Lot FAX30-1358</u>						
1430	42	0	-	2838	1.91803	Temp. 63°F
1430 $\frac{1}{2}$	43	3	N	2788	1.94144	
1431	44	4	N	2753	1.97393	
1431 $\frac{1}{2}$	45	3	N	2772	1.97118	
1432	46	2	N	2763	1.95993	
1432 $\frac{1}{2}$	47	2	N	2788	1.99376	
1433	48	1	N	2800	1.99507	
1433 $\frac{1}{2}$	49	2	N	2797	1.99437	
1434	50	1	NW	2731	1.96138	
1434 $\frac{1}{2}$	51	0	-	2789	1.94027	
1435	52	0	-	2771	1.96105	
1435 $\frac{1}{2}$	53	0	-	2819	1.92318	
1435 $\frac{3}{4}$	54	0	-	2799	1.90037	
1436	55	0	-	2775	1.94941	
1436 $\frac{1}{4}$	56	0	-	2837	1.92944	
1436 $\frac{1}{2}$	57	0	-	2821	1.91016	
1437	58	0	-	2745	1.95350	
1437 $\frac{1}{2}$	59	0	-	2782	1.91819	
1438	60	0	-	2826	1.99032	
1438 $\frac{1}{4}$	61	0	-	2824	1.94494	Temp. 64°F
<u>Cartridge, Ball, Caliber .280, Lot 19A</u>						
1441	62	0	-	2369	2.08541	Temp. 64°F
1441 $\frac{1}{2}$	63	0	-	2339	Lost	Missed Time-of-flight screen.
1442	64	0	-	2403	2.06397	
1442 $\frac{1}{2}$	65	0	-	2353	2.09324	
1443	66	0	-	2356	2.10331	
1443 $\frac{1}{2}$	67	0	-	2380	2.07315	
1444	68	0	-	2380	2.04517	
1444 $\frac{1}{2}$	69	2	E	2372	2.07426	
1444 $\frac{3}{4}$	70	1	E	2378	2.06843	
1445	71	4	E	2354	2.11404	
1445 $\frac{1}{2}$	72	3	ENE	2342	2.10549	
1446	73	0	-	2385	2.07505	
1449	74	0	-	2420	2.03524	
1449 $\frac{1}{2}$	75	0	-	2370	2.08332	
1450	76	0	-	2349	2.11018	
1450 $\frac{1}{2}$	77	0	-	2364	2.09139	

## APPENDIX V

ME	RD. NO.	WIND	WIND DIRECTION	INST.	TIME OF	REMARKS
		VELOCITY mph		AT 78° fpm	FLIGHT sec	
.51	78	0	-	2320	2.11909	
.51½	79	0	-	2348	2.11136	
.52	80	0	-	2352	2.09084	
.52½	81	0	-	2349	2.08232	
.53	82	0	-	2358	2.05845	
.53½	83	0	-	2374	2.06183	
.54	84	0	-	2355	2.09009	Temp. 65°F

Cartridge, AP, Caliber .30, T93, Lot FAX30-1357

.59	85	0	-	2801	1.94308	Temp. 65°F
.59½	86	0	-	2810	1.90353	
.59¾	87	0	-	2803	1.95508	
.00	88	0	-	2851	1.93579	
.00½	89	0	-	2835	1.87137	
.00¾	90	0	-	2789	1.93242	
.01	91	0	-	2808	1.89776	
.01½	92	0	-	2830	1.92333	
.02	93	0	-	2798	1.91536	
.02½	94	0	-	2797	1.96380	
.03	95	0	-	2827	1.91704	
.03½	96	0	-	2830	1.91212	
.03¾	97	0	-	2860	1.99676	
.03½	98	0	-	2804	1.91737	
.04	99	0	-	2768	1.97209	
.04½	100	0	-	2764	1.97167	
.04¾	101	0	-	2790	1.95754	
.05	102	0	-	2763	1.97926	
.05½	103	0	-	2829	1.92153	
.05¾	104	0	-	2807	1.91458	Temp. 65°F

Cartridge, AP, Caliber .280, Lot 24A

.08	105	0	-	2263	2.27795	Temp. 65°F
.08½	106	2	ENE	2284	2.21787	
.09	107	2	ENE	2319	Lost	Missed Time-of-flight screen
.10	108	1	E	2312	Lost	Missed Time-of-flight screen
.12	109	0	-	2294	Lost	Missed Time-of-flight screen
.12½	110	0	-	2292	Lost	Missed Time-of-flight screen
.15	111	0	-	2325	Lost	Missed Time-of-flight screen
.16	112	0	-	Lost	Lost	Missed Time-of-flight screen
.19	113	0	-	2334	2.20608	
.20	114	0	-	2359	2.16161	
.20½	115	0	-	2310		
.21	116	0	-	Lost		Velocity and time-of-flight lost

APPENDIX V

<u>ME</u>	<u>RD. NO.</u>	<u>WIND VELOCITY mph</u>	<u>WIND DIRECTION</u>	<u>INST. VELOCITY AT 78' fps</u>	<u>TIME OF FLIGHT sec</u>	<u>REMARKS</u>
22	117	0	-	2328	2.17639	
22½	118	0	-	2305	2.22631	
23	119	0	-	2343	2.19087	
23½	120	0	-	2318	2.24025	
24	121	0	-	Lost	2.17616	
24½	122	0	-	2300	2.20819	
24¾	123	0	-	2283	2.25966	
25	124	0	-	2293	2.23098	
25½	125	0	-	2301	2.21187	
25¾	126	0	-	2302	2.23028	
26	127	0	-	2275	2.23261	
26½	128	0	-	Lost	2.20771	Velocity lost
28	129	0	-	Lost	2.24082	Velocity lost
28½	130	0	-	2285	2.25165	
28¾	131	0	-	2275	2.26155	
29	132	0	-	Lost	2.24840	
29½	133	0	-	2300	2.22748	
30	134	0	-	2279	2.26037	
30½	135	0	-	2273	2.26315	
31	136	0	-	2266	2.27708	
31½	137	0	-	2286	Lost	Missed Time-of-flight screen
32	138	0	-	2303	2.22902	
32½	139	0	-	2258	2.25902	Temp. 65°F

Cartridge, API, Caliber .30, T101, Lot FAX30-1356

35	140	0	-	2755	1.90481	Temp. 65°F
35½	141	0	-	2749	1.91658	
36	142	0	-	2792	1.90101	
36½	143	0	-	2800	1.89935	
36¾	144	0	-	2747	1.94678	
36¾	145	0	-	2753	1.92973	
37	146	0	-	2768	1.89736	
37½	147	0	-	2737	1.91810	
38	148	0	-	2753	1.90386	
38½	149	0	-	2770	1.90048	
39	150	0	-	2743	1.90488	
39½	151	0	-	2737	1.93879	
39¾	152	0	-	2770	1.91550	
40	153	0	-	2751	1.92380	
40½	154	0	-	2765	1.90031	
40¾	155	0	-	2761	1.90302	
41	156	0	-	2759	1.91163	
41½	157	0	-	2748	1.89976	
41¾	158	0	-	2749	1.90072	
42	159	0	-	2782	1.88843	Temp. 65°F

APPENDIX V

TIME	RD. NO.	WIND VELOCITY mph	WIND DIRECTION	INST. VELOCITY AT 78' f/s	TIME OF FLIGHT sec.	REMARKS
Cartridge, API, Caliber .280, Lot 25A						
1545	160	0	-	2234	2.23008	Temp. 65°F
1545½	161	0	-	2210	2.29831	
1546	162	0	-	2229	2.23159	
1546½	163	0	-	2241	2.26263	
1546½	164	0	-	2214	2.22946	
1547	165	0	-	2247	2.24597	
1547½	166	0	-	2256	2.26812	
1547½	167	0	-	2239	2.27046	
1548	168	0	-	2228	2.25248	
1548½	169	0	-	2260	2.23813	
1548½	170	0	-	2233	2.23742	
1549	171	0	-	2207	2.30871	
1549½	172	0	-	2243	2.27342	
1549½	173	0	-	2239	2.23005	
1550	174	0	-	2198	2.29124	
1550½	175	0	-	2210	2.26436	
1550½	176	0	-	Lost	2.25050	Velocity lost
1550½	177	0	-	2224	2.26219	
1551	178	0	-	2200	2.28336	
1552	179	0	-	2215	2.26050	
1552½	180	0	-	2222	2.28462	Temp. 65°F
Cartridge, Observing, Caliber .280, Lot 17A						
1559	181	3	N	2347	2.15613	
	182	2	NE	2398	2.10722	
	183	2	N	2395	2.08658	
	184	0	-	Lost	2.09735	Velocity lost
1600	185	0	-	2366	2.13144	
	186	0	-	2382	2.10113	
	187	0	-	2415	Lost	Missed Time-of-flight screen.
	188	0	-	2405	2.09885	
1601	189	0	-	2380	2.11235	
	190	0	-	Lost	2.10883	Velocity lost
1602	191	0	-	2416	Lost	Missed Time-of-flight screen
1603	192	2	N	2404	2.09954	
1604	193	3	NE	2392	2.11256	
	194	2	NE	2325	2.11440	
	195	2	N	2325	2.08332	

## APPENDIX V

~~UNIDENTIFIED~~

TIME	RD. NO.	VELOCITY mph	WIND DIRECTION	INST.	TIME OF	REMARKS
				AT 78' fps	FLIGHT sec	
1605	196	1	N	2390	2.09766	
	197	3	N	2378	2.14945	
	198	2	N	2384	2.12831	
1606	199	3	N	2410	2.08264	
	200	4	N	2399	2.11770	
	201	3	N	2392	2.12140	
	202	3	N	2417	2.07774	
1607	203	5	N	2385	2.11655	
	204	5	NE	2384	2.13718	Temp. 65°F

Cartridge, Observing, Caliber .30, T103, Lot 2

1610	205	3	N	2793	Lost	Missed Time-of-flight screen. Temp. 65°F
1619	206	0	-	2797	2.07673	
	207	0	-	2741	2.17823	
	208	0	-	2811	2.07295	
1620	209	0	-	2755	2.13849	
	210	0	-	2763	2.07025	
	211	0	-	2792	2.07159	
	212	0	-	2740	2.12615	
1621	213	3	N	2780	2.06911	
	214	5	N	2772	2.09845	
	215	3	N	2769	2.09515	
	216	2	N	2781	2.11239	
1622	217	6	N	2766	2.10269	
	218	5	N	2772	2.06516	
1623	219	6	N	2772	Lost	Missed Time-of-flight screen
1625	220	2	N	2771	2.11239	
	221	2	N	2771	2.15236	
1626	222	2	NNW	2819	2.07405	
	223	0	-	2786	2.11889	
	224	0	-	2811	2.06161	
	225	0	-	2733	2.13358	
1627	226	0	-	2784	2.11339	Temp. 65°F

## APPENDIX V

MAXIMUM RANGE DATA

DATE: 4 May 1950

AMMUNITION: Cartridge, Ball, Caliber .280 Lot 19A

GUN: Mann Barrel, 450/2 Fitted to Enfield Receiver

<u>RD. NO.</u>	<u>TIME</u>	<u>RANGE</u> <u>yd</u>	<u>DEF</u> <u>yd</u>	<u>TIME OF</u> <u>FLIGHT</u> <u>sec</u>	<u>REMARKS</u>
1-9	0900				Locators. Short Locators.
10-15	0917				
16	0920	2856	20R	23.6	
17	0921	2846	40R	23.5	
18	0922				Short.
19	0923				Short. Moved mount.
20	0932	2936	20L	Lost	
21	0933	2926	18L	24.7	
22	0934	2896	10L	23.8	
23	0935	2876	30L	Lost	
24	0936	2846	28L	23.5	Moved right 30 yards.
25	0937	2836	10L	23.3	First record round.
26	0938	2841	5L	23.5	
27	0939	2906	5R	23.8	
28	0940	2856	10L	23.5	
29	0940	2861	10L	23.5	
30	0941	Lost	--	--	Lost.
31	0941	2881	5L	23.5	
32	0942	Lost	--	--	Lost.
33	0943	2926	0	23.7	
34	0944	2996	5L	24.4	
35	0945	2831	5L	23.4	
36	0946	2916	5L	23.7	
37	0947	2986	10L	23.7	
38	0948	2986	5L	23.6	
39	0948	Lost	--	--	Lost.
40	0949	2846	5L	23.4	
41	0949	2826	5L	23.5	
42	0950	2876	5L	23.5	
43	0951	2816	5L	23.3	
44	0952	Lost	--	--	Lost.
45	0952	2996	5L	24.1	
46	0953	2841	5L	23.1	
47	0954	2816	10L	23.3	
48	0955	2986	0	24.1	
49	0956	2986	5L	24.1	
50	0957	2886	10L	23.4	
51	0958	2926	5L	23.8	
52	0958	2846	10L	23.3	

APPENDIX V

Height of Muzzle above Mean Low Tide - 20.30 feet.

Elevation of Fire - 28° 0'

WEATHER DATA

DATE: 4 May 1950

<u>TIME</u>	<u>TEMP °F</u>	<u>DENSITY</u>	<u>TIDE LEVEL ft</u>	<u>WIND SURFACE</u>	<u>VELOCITY, mph ALOFT</u>
0900	56	1.025	+ .9	0	0
0930	57	1.023	+1.1	0	0
1000	58	1.022	+1.4	0	0

APPENDIX V

DATE: 28 April 1950

AMMUNITION: Cartridge, Ball, Caliber .30, Lot No. FAX30-1358

GUN: Accuracy Barrel No. 5, Fitted to 1905 Receiver No. 1528613

<u>RD. NO.</u>	<u>TIME</u>	<u>RANGE</u> <u>yd</u>	<u>DEF°</u> <u>yd</u>	<u>TIME OF</u> <u>FLIGHT</u> <u>sec</u>	<u>REMARKS</u>
1	0955	2834	6L	23.5	First record round.
2	0956	2853	1R	23.6	
3	1004	2818	4R	23.5	
4	1005	2838	0	23.5	
5	1006	2794	3L	23.2	
6	1007	Lost	-	--	Lost.
7	1007	2814	0	23.2	
8	1009	2808	3R	23.4	
9	1010	2776	3L	23.2	
10	1010	Lost	-	--	Lost.
11	1011	Lost	-	--	Lost
12	1012	2823	2R	24.4	
13	1013	2803	1L	23.2	
14	1014	Lost	-	--	Lost
15	1015	2823	1L	23.5	
16	1016	Lost	-	23.6	Lost
17	1017	2808	3L	23.4	
18	1019	2818	3L	23.5	
19	1020	Lost	-	23.5	Lost
20	1022	Lost	-	23.5	Lost
21	1024	2848	8L	23.5	
22	1026	Lost	--	24.0	Lost
23	1029	Lost	-	-	Lost
24	1030	2893	10L	23.9	

Height of Muzzle above Mean Low Tide - 20.23 feet.

Elevation of Fire - 28° 0'

WEATHER DATA

DATE: 28 April 1950

<u>TIME</u>	<u>TEMP</u> <u>°F</u>	<u>DENSITY</u>	<u>TIDE</u>	<u>WIND VELOCITY, mph</u>	
			<u>LEVEL</u> <u>ft</u>	<u>SURFACE</u>	<u>ALOFT</u>
0950	56	1.026	0.5	0	0
1020	57	1.024	0.7	0	0

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APPENDIX W

Velocity Data for Caliber .280  
Accuracy Barrels 450/2 and 450/3

(2 sheets)

~~DATA~~

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APPENDIX W.

VELOCITY TEST

Date: 12 May 1950 Time Started: 1300 Time Finished: 1325

Instrument Receiver No.: 450/2 Barrel No.: 450/2 Previous Rounds: 451

Ammunition Temperature: 70°F Range Temperature: 62°F Density: 1.025

Chronograph Type: Counter Initiator Type: Lumiline

Test Ammunition: Cartridge, Caliber .280, Ball, Lot 19A.

ROUND NO.	INITIAL VELOCITY AT 70°, fpc	PRESSURE, psi
1	2367	
2	2392	
3	2413	
4	2379	
5	2376	
6	2370	
7	2365	
8	2358	
9	2366	
10	2361	
11	2380	
12	2353	
13	2329	
14	2365	
15	2362	
16	2398	
17	2365	
18	2352	
19	2333	
20	2366	

APPENDIX W

VELOCITY TEST

Date: 12 May 1950 Time Started: 1135 Time Finished: 1200

DATAFIRE Receiver No.: 450/3 Barrel No.: 450/3 Previous Rounds: 64

Ammunition Temperature: 70°F Range Temperature: 62°F Density: 1.022

Ceropgraph Type: Counter Initiator Type: Lumiline

Test Ammunition: Cartridge, Caliber .280, Ball, Lot 19A.

ROUND NO.	INSTANTANEOUS VELOCITY AT 73', fps	PRESSURE, psi
1	2340	
2	2351	
3	2332	
4	2332	
5	2352	
6	2307	
7	2322	
8	2318	
9	2325	
10	2350	
11	2355	
12	2364	
13	2344	
14	2338	
15	2315	
16	2353	
17	2315	
18	2350	
19	2328	
20	2356	

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